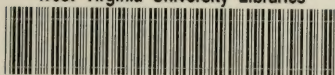



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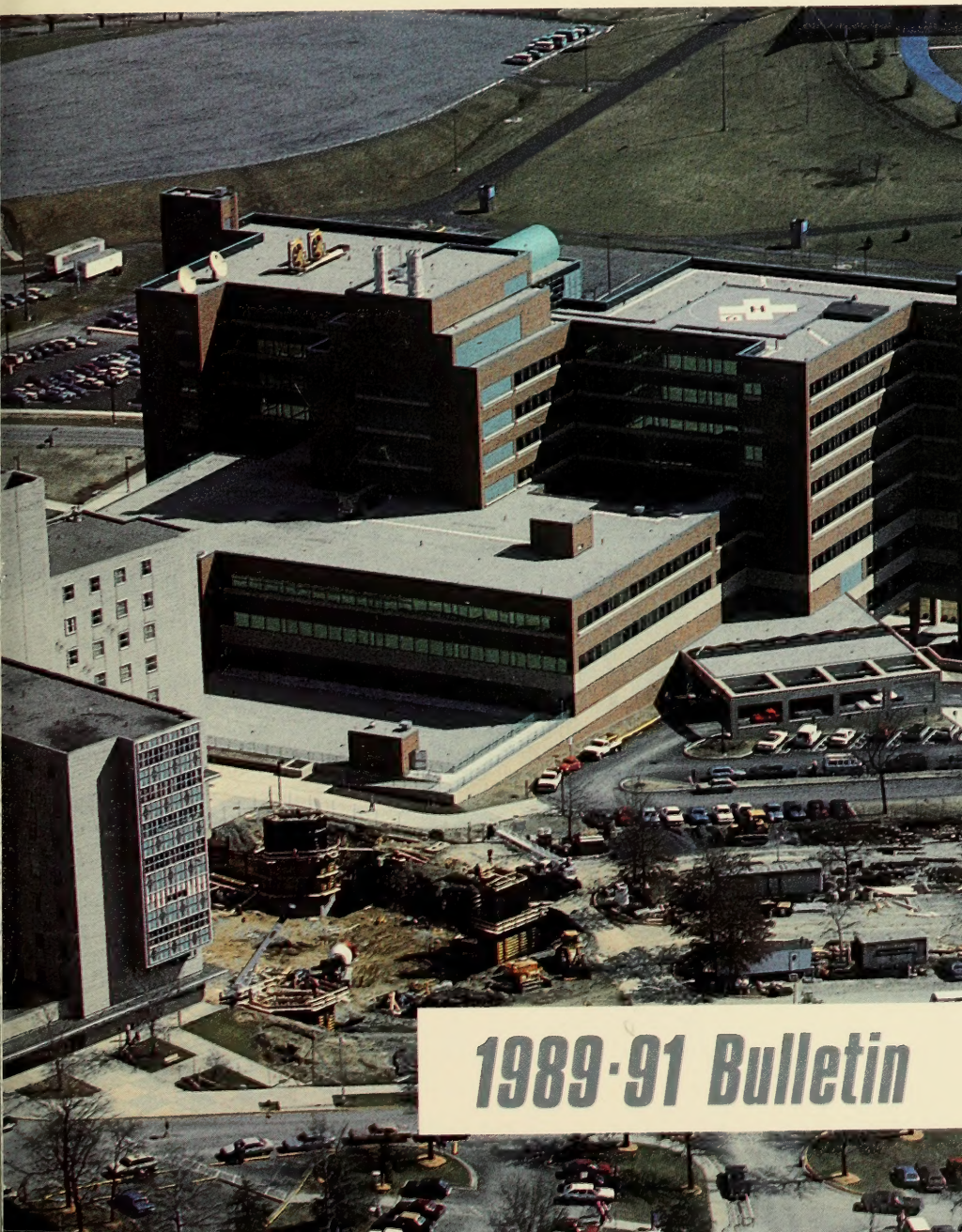
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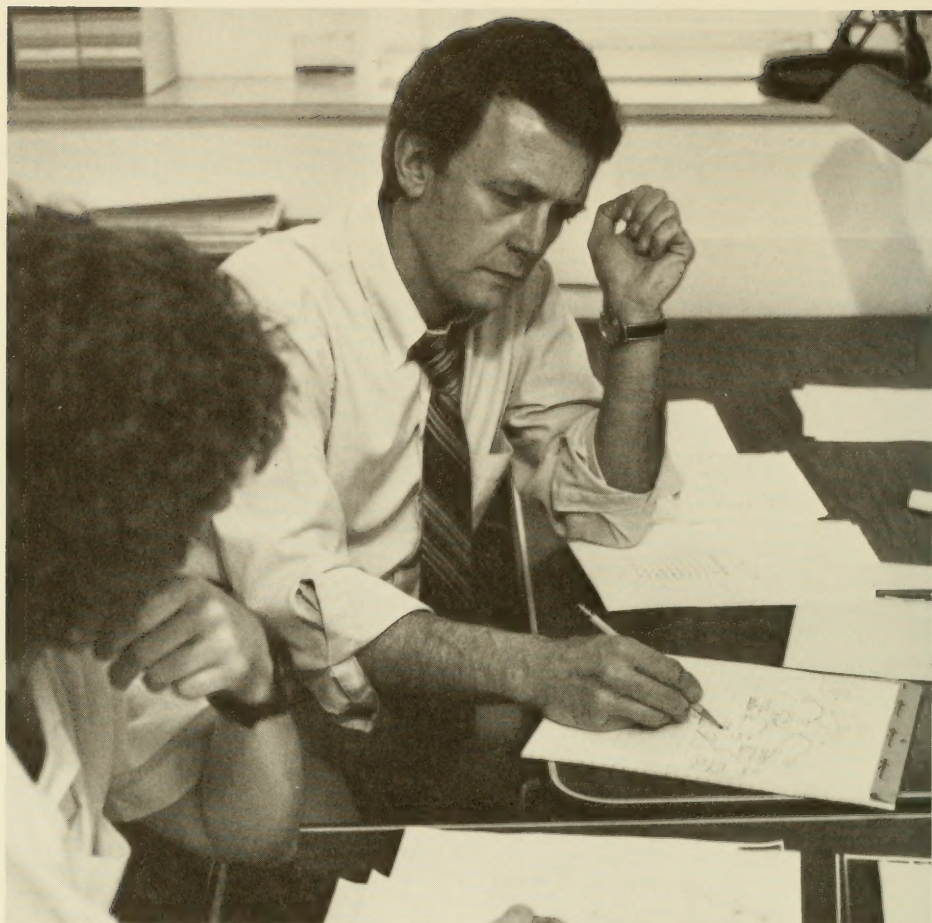
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# *Health Sciences Center Catalog*



**1989-91 Bulletin**



# *Fulfilling Our Mission*

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*Teaching · Research · Public Service*

# **West Virginia University Health Sciences Center 1989-91 Catalog**

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**Basic Sciences  
School of Dentistry  
School of Medicine  
School of Nursing  
School of Pharmacy**

The 1989-91 West Virginia University Health Sciences Center Catalog is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Board of Regents, University administrators, and the faculties of the schools and colleges to best meet the goals and objectives of the University. The University, therefore, reserves the right to change, delete, supplement, or otherwise amend at any time the information, course offerings, requirements, rules, and policies contained herein without prior notice.

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# UNIVERSITY CALENDAR, 1989-90

## Summer Sessions, 1989

May 18, Thursday	Registration, First Summer Session
May 18, Thursday	First Classes
May 29, Monday	Memorial Day Recess
June 30, Friday	Final Exam for First Six-Week Session
July 3, Monday	Registration, Second Summer Session
July 3, Monday	First Classes
July 4, Tuesday	Independence Day Recess
August 11, Friday	Final Exam for Second Six-Week Session

## First Semester, 1989

August 17, 18, Thursday and Friday	New Student Orientation
August 18, Friday	General Registration
August 21, Monday	First Classes
August 21, Monday	Late Registration Fee in Effect for All Students
August 25, Friday	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
September 4, Monday	Labor Day Recess
September 30, Saturday	Rosh Hashannah—Day of Special Concern
October 6, Friday	Mid-Semester
October 9, Monday	Yom Kippur—Day of Special Concern
October 10, Tuesday	Mid-Semester Reports Due
October 27, Friday	Last Day to Drop a Class
November 18, Saturday, to November 26, Sunday, inclusive	Thanksgiving Recess
December 7, Thursday	Last Day to Withdraw From University
December 8, Friday	Last Day of Classes
December 11, Monday, to December 16, Saturday, inclusive	Final Examinations
December 17, Sunday, to January 4, Thursday, inclusive	Christmas Recess

## Second Semester, 1990

January 5, Friday	General Registration
January 8, Monday	First Classes
January 8, Monday	Late Registration Fee in Effect for All Students
January 12, Friday	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
January 15, Monday	Martin Luther King, Jr. Birthday Recess
February 7, Wednesday (Not a Holiday)	West Virginia University Day
February 23, Friday	Mid-Semester
February 27, Tuesday	Mid-Semester Reports Due
March 3, Saturday, to March 11, Sunday, inclusive	Spring Recess
March 23, Friday	Last Day to Drop a Class
April 10, Tuesday	Faculty Assembly
April 10, Tuesday	Passover—Day of Special Concern
April 13, Friday	Friday Before Easter Recess
April 26, Thursday	Last Day to Withdraw From University
April 27, Friday	Last Day of Classes
April 30, Monday, to May 5, Saturday, inclusive	Final Examinations
May 7, Monday	Grade Reports for All Graduates Due in Dean's Office
May 7, Monday	Dean's Reports for All Graduates Due in Office of Admissions and Records
May 12, Saturday	Alumni Day
May 13, Sunday	Commencement

The WVU academic year is divided into two semesters of about seventeen weeks each and two summer sessions of six weeks each.

Calendar for 1990-91 academic year will be available January 15, 1990.

# **West Virginia University Health Sciences Center**

The West Virginia University Health Sciences Center comprises four schools awarding undergraduate, graduate, and professional degrees in the health care fields. The Schools of Dentistry, Medicine, Nursing, and Pharmacy currently enroll 1,292 students in programs leading to 24 different degrees.

The oldest complete programs offered at the center are the undergraduate programs in medical technology and pharmacy. In 1957, the Basic Sciences Building, renamed the Health Sciences Center in 1988, opened and the School of Dentistry offered the first curriculum leading to a professional degree. This marked the beginning of a pattern of growth that continues today. 1960 saw the opening of the University Hospital, the beginning of the B.S.N. and M.S.N. programs through the School of Nursing, and the expansion of the School of Medicine from a two-year to a four-year, degree-granting medical college. During the '70s, agreements with the Charleston Area Medical Center and Wheeling Hospital led to the opening of the Charleston Division and the Wheeling Division.

Today, the West Virginia University Health Sciences Center has more than 10,000 alumni in professional practice. This history of growth is justifiably a source of pride; however, it is the present that generates excitement at the Center. 1988 marked the opening of Ruby Memorial Hospital, an \$87 million, 376-bed teaching hospital. From the helipad on the roof that brings the facility within physical reach of patients and physicians anywhere in West Virginia to the neonatal intensive care unit, from the inpatient physical therapy satellite unit to the radiology equipment and the Mary Babb Randolph Cancer Center, this teaching hospital is prepared to teach tomorrow's health care practitioners.

With the surge toward high tech care made possible by the philanthropy of Mrs. Hazel Ruby McQuain, the Health Sciences Center is resolved to retain the best qualities from its past as it adapts to the present and prepares for the future.

## **Dental Clinic**

The College of Dentistry maintains a dental clinic. The clinic accepts patients who have dental problems of teaching value. Faculty members closely supervise those students assigned to clinic patients. The students get invaluable experience through work at the clinic, and several thousand patients receive a much needed service.

## **University Health Service**

When you enroll at the University, one of the charges that you pay is the health service fee. This fee allows you to use the primary medical care provided by the University Health Service. The service, located on the first floor of Health Sciences South, includes medical consultation and treatment. To use the service, you must present your current student ID.

If you require more specialized care, the Health Service may refer you to an outpatient clinic at the Health Sciences Center. In this case, you are responsible for registration fees, doctor's fees, x-ray or lab fees, etc. The University Health Service publishes a brochure that details the services included in the health service fee and outlines services that are not provided.

The emergency department is available to you when the University Health Service is closed. However, all costs incurred at the emergency department are your responsibility. Since most insurance policies cover emergency department costs only when a true emergency exists, we advise you to use this service responsibly and maturely. A voluntary insurance plan is available to you to cover inpatient and outpatient services beyond the primary care covered by the health fee. We urge you to purchase this or similar coverage.

## **Library**

The Health Sciences Center Library contains more than 200,000 bound volumes and receives about 2,300 domestic and international periodicals. Additionally, the library, along with the other University libraries, subscribes to an active interlibrary loan service, which makes all member libraries' holdings available to you here. The Health Sciences Center Library exists to serve you, our faculty, our staff, health professionals across the state, and to some extent, the general public. Library hours are posted at the entrance, and variations in regular schedules are posted in advance.

## **Admission**

To apply for admission to the various schools of the Health Sciences Center, write to the Assistant Director of Admissions and Records, Health Sciences North, Morgantown, WV 26506, and ask for the appropriate application forms.

Because space at the HSC is limited and our applications are numerous, we give preference in the admissions process to qualified residents of West Virginia. However, we always consider outstanding nonresident applications. We give most careful consideration to those personal qualifications that reflect your fitness for the study and practice of your chosen profession.

Because we are primarily a group of professional schools and most of our applicants are enrolled in undergraduate studies at a residential college or university, we remind you to include your permanent home address with your request for an application form.

## **Application Fees**

Application fees for the Schools of Dentistry and of Medicine are \$30.00. Applications fees for all other Health Sciences Center programs are \$10.00. Application fees must accompany your application form.

When you are accepted into one of our programs (except for Dental Hygiene or nonresident applicants to the School of Dentistry), you are asked to deposit \$50.00 to make your acceptance official. The deposit for Dental Hygiene is \$40.00, and for nonresidents in the School of Dentistry, the deposit is \$100.00. These deposits are applied toward your first semester tuition when you enroll.

If you pay your deposit but do not enroll in the School of Medicine, your deposit is refundable until March 30 of the year you would have enrolled. Deposits for all other programs are not refundable.

Note: During the first semester of your first year at WVU Health Sciences Center, we require that you complete certain prescribed immunization and diagnostic procedures.

Specific entrance requirements for all Health Sciences programs are detailed in the section pertaining to each program.

For information about freshman, transfer, and international admission to West Virginia University, please refer to the undergraduate catalog.

**Health Sciences Programs At West Virginia University**

Degree Program	Bachelor	Master	Doctorate
<b>School of Dentistry</b>			
Dental Hygiene .....	B.S.....	M.S.	
Dentistry .....			D.D.S.
Endodontics .....		M.S.	
Orthodontics .....		M.S.	
<b>School of Medicine</b>			
Anatomy .....		M.S.	Ph.D.
Biochemistry (Medical) .....		M.S.	Ph.D.
Medical Technology .....	B.S.....	M.S.	
Medicine .....			M.D.
Microbiology (Medical) .....		M.S.	Ph.D.
Pharmacology and Toxicology .....		M.S.	Ph.D.
Physical Therapy .....	B.S.		
Physiology (Medical) .....		M.S.	Ph.D.
Biomedical Sciences .....			Ph.D.*
<b>School of Nursing</b>			
Nursing .....	B.S.N. ....	M.S.N.	
<b>School of Pharmacy</b>			
Pharmaceutical Sciences .....		M.S.	Ph.D.
Pharmacy .....	B.S.Pharm.		
<b>University Hospital</b>			
Medical Graduate Residencies			
Radiologic Technology .....	Certificate		

\*Awarded under the auspices of the degree-granting authority of West Virginia University, but in cooperation with the Health Sciences Departments of the Marshall University School of Medicine. (For details, see the WVU Graduate Catalog or the Marshall University Graduate Catalog.)

**Student Responsibility**

As a student, you are responsible for your academic well being. Specifically, you are responsible for knowing your scholastic standing as it relates to the published regulations and standards of West Virginia University. This responsibility includes the regulations of your college or school and the regulations of the department or division in which you are earning a degree.

**Regulations Affecting Degrees**

All West Virginia University degrees are conferred by the West Virginia Board of Regents and are based upon the recommendations of the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer session in which you complete the requirements for that degree.

You become eligible to graduate when you complete the requirements of the University and your college or school which were in effect at the time you first registered at the University. You have seven years after your first registration to complete the degree requirements. If you do not, you will have to meet the requirements listed in a later catalog—one that is no more than seven years old at the time that you complete your studies. With the consent of your adviser and your dean, you may choose to meet the conditions published in a later catalog. The only program changes that students must observe are those enacted by the West Virginia Board of Regents or by local, state, or federal law; you must follow these changes.

In order to graduate, you must see your academic adviser and complete an application for graduation and diploma; file your application during the first month of the semester or summer session in which you expect to graduate.

West Virginia University policy dictates that, in view of their professional responsibilities to the general public, the faculty of a professional school may recommend to the President of the University that a student be removed from its rolls. The faculties' formal decision for this action must be presented in writing to the President. The decision of the faculty must find that the student is not fit to meet the qualifications and responsibilities of the profession.

West Virginia University will not confer a degree on any candidate nor will it issue a transcript to any student until payment of all tuition, fees, and other indebtedness to any unit of the University is made.

## **Credits Required**

Each degree program is based upon a combination of required courses and electives. Certain University requirements are listed below. In addition, the various colleges and schools determine their own credit requirements and course grade averages for graduation. Total credits vary from 128 to 145. Required grade averages range from 2.0 to 2.5.

## **Liberal Studies Program**

The requirements of the LSP apply to all students who entered WVU as freshmen after August 15, 1988 or students transferring to WVU who entered any institution of higher education after August 15, 1988. All other students may choose to fulfill either the requirements of the LSP or of the previous core curriculum.

## **Preface**

West Virginia University believes that its baccalaureate graduates, in addition to developing competence in major and minor fields of study, should be broadly educated. The University's goal is to prepare its graduates to integrate knowledge from a wide variety of fields and to value the continuing search for breadth of knowledge; to be creative and open to new ideas; and to be able to deal constructively with the technological, cultural, and social changes that challenge us in our own country and the world. In order that West Virginia University graduates may be able to adapt to changing circumstances throughout a lifetime of learning, the Liberal Studies Program (LSP) helps students to learn how to acquire knowledge, how to make critical judgments in a logical and rational manner, and how to communicate their findings clearly. The Program encourages students to appreciate the past; to value lasting traditions; to accept their responsibilities as citizens of a free society; to respect the traditions, values and individuality of fellow human

beings; to broaden their knowledge about people different from themselves, whether by reason of nationality, age, class, gender, or race; and to understand the basic concepts and principles of mathematics and the sciences.

Therefore, West Virginia University baccalaureate graduates are expected to possess knowledge and experience in three broad clusters of learning: the arts and humanities, the social and behavioral sciences, and mathematics and natural sciences. In the arts and humanities, students learn to understand and appreciate the human experience. In the social and behavioral sciences, students develop an awareness of personal, interpersonal, and societal forces that shape individual lives. In mathematics and the natural sciences, students acquire an understanding of the unifying principles and methods of science and their application to natural phenomena. University graduates also are expected to be able to communicate effectively in the written English language and to possess skills in post-high-school mathematics.

## **Liberal Studies Program**

West Virginia University Liberal Studies Program requirements for all students who receive the baccalaureate degree are divided into a skills component and a distribution component. These are described below.

### **A. Skills Requirements**

#### **1. Writing**

- a. All students must successfully complete English 1 and 2. This requirement is in addition to the Cluster A requirements described in Section B below.
- b. All students must successfully complete at least one course that requires a substantial writing component and in which the grade is partially determined by writing skills. These courses will be designated by a "W" in the *Schedule of Courses*. The student must complete English 2 before fulfilling the "W" requirement.

#### **2. Mathematics**

All students must successfully complete at least 3 hours of mathematics or statistics at the college algebra level or above. This requirement is in addition to the Cluster C requirement which is described in Section B below. Courses approved for the mathematics skills requirement: Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, and 168; Economics 125 and Statistics 101.

### **B. Distribution Requirements**

#### **1. Description of Program Clusters**

The University courses in the LSP that provide students with broad liberal knowledge and experience are grouped into three Clusters:

##### **a. Cluster A: Humanities and Fine Arts**

The study of humanities develops knowledge of and appreciation for the accumulated wisdom and experience contained in world literature, history, fine arts, religion, and philosophy, with the objective of bringing the student to an active consciousness of the living, operating, and continuing values of human culture.

##### **b. Cluster B: The Social and Behavioral Sciences**

The social and behavioral sciences develop in students the knowledge and appreciation of both themselves and the world in which they live. Through the study of anthropology, economics, geography, linguistics, political science, psychology, sociology, and communica-

tion studies, students are able to comprehend major concepts, evaluate movements and ideas, and anticipate future trends in societies both at home and abroad.

c. Cluster C: Natural Sciences and Mathematics

Courses in the natural sciences and mathematics provide information about the natural world, and provide a perspective on how an understanding of the natural world is developed. Educated persons should have a knowledge of the physical, chemical, geological, and biological entities and processes that constitute the natural world. Courses in mathematics, statistics, and computer science can provide the technical tools for an understanding of the natural world, as well as an understanding of the methods and value of mathematics considered as a discipline in itself.

2. Distribution of Cluster Requirements

a. Cluster A Requirements: 12 hours of Cluster A courses must be successfully completed, distributed according to the following provisions:

- (1) Courses must be successfully completed in three disciplines.
- (2) Two courses must be successfully completed in the same discipline.
- (3) If foreign language courses are chosen to fulfill Cluster A requirements, no student may use more than one first semester of an elementary foreign language. Language courses in a student's native language may not be used to fulfill Cluster A requirements.
- (4) No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster A requirements.

b. Cluster B Requirements: 12 hours of Cluster B courses must be successfully completed and distributed according to the following provisions:

- (1) Courses must be successfully completed in three disciplines.
- (2) Two courses must be successfully completed in the same discipline.
- (3) No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster B requirements.

c. Cluster C Requirements: 11-12 hours of Cluster C courses must be successfully completed and distributed according to the following provisions:

- (1) Courses must be successfully completed in two disciplines.
- (2) At least one course must include a laboratory.
- (3) No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster C requirements.

d. One three credit-hour course must focus substantially on the study of a foreign or minority culture or cultures or on women and/or issues of gender.

3. Inventory of LSP Courses

The following courses listed in Clusters A, B, and C do not constitute an inclusive listing. The Liberal Studies Committee will be changing the list of courses as evaluations are continually made of courses submitted to the LSP Committee for its approval. Students and advisers should consult the latest *Schedule of Courses* for the most recent inventory of courses included in the Liberal Studies Program. Any course listed at any time during the student's period of study may be counted for Liberal Studies Program credit. An asterisk precedes the course numbers for

those courses which satisfy the Foreign Culture, Minority, or Gender Studies requirement (see B.2.d.).

**Cluster A Courses:**

Art 30, 105, 106.  
Arabic (Arab.) 1, 2, 3, 4.  
Chinese (Chin.) 1, 2, 3, 4.  
Classics (Class.) 1, 2, 3, 4, 11, 12, 13, 14, 101, 102.  
Communication Studies (Comm.) 21, 187.  
English (Engl.) 21, 22, 24, 25, 30, 35, 36, 40, \*80, \*85, 125, 130, 131, 132, 133, 134, 141, 143, 150, 170, 171, 172, 175, 178, 180, 181, \*186, \*188.  
French (Frch.) 1, 2, 3, 4, 10, 11.  
Foreign Literature in Translation (FLIT) \*13, \*14, \*15, \*16, \*17, \*18, \*111, \*112, \*121, \*122, \*131, \*132, \*141, \*142, \*151, \*152, \*161, \*162, \*166, \*171, \*181, \*182, \*188, \*189.  
German (Ger.) 1, 2, 3, 4, 10, 11.  
History (Hist.) 1, 2, \*5, \*6, 11, 12, 52, 53, 100, 101, 103, 105, 107, 109, \*117, \*118, 119, 120, \*121, 122, 155, 156, 157, 159, 161, 177.  
Humanities (Hum.) 1, 2, 3, 4, \*5, 10, 11.  
Italian (Ital.) 1, 2, 3, 4.  
Japanese (Japan.) 1, 2, 3, 4.  
Landscape Architecture (L. Arc.) 112.  
Linguistics (Lingu.) 3.  
Multidisciplinary Studies (MDS) \*40, 91.  
Music 30, 33, 34, 129, 136, 137, 138.  
Philosophy (Phil.) 1, 2, 3, 4, 10, 13, 15, 20, 103, 105, 106, 108, 111, \*113, 120, 121, \*122, 123, \*125, 150, 158, 159, 106/Math. 161, 166, 171, 172, 187.  
Polish (Polsh.) 1, 2.  
Portuguese (Port.) 1, 2, 3, 4.  
Religious Studies (Relig.) 5, 100, 101, 102, 103, 104, 105, 110, 111, 112, 120, 121, 128, \*130, \*131, \*132, 142, 150.  
Russian (Russ.) 1, 2, 3, 4.  
Spanish (Span.) 1, 2, 3, 4, 10, 11.  
Theatre (Theat.) 30, 50, 74.  
Women's Studies (Wm. St.) \*40.

**Cluster B Courses:**

Agricultural Education (Ag. Ed.) 162.  
Child Development and Family Studies (CD&FS) 10.  
Communication Studies (Comm.) 11, 12, 14, 80, 106, 109, \*134, \*135, 180.  
Economics (Econ.) 51, 54, 55.  
Forestry (For.) 140.  
Geography (Geog.) 1, 2, 8, 105, 109, 110, 140, 141, 143, 144, 145.  
History (Hist.) \*4, \*141, \*142.  
Journalism (Journ.) 1.  
Linguistics (Lingu.) 1.  
Multidisciplinary Studies (MDS) 2, \*40, 50, \*60, 70, 90, 92.  
Mineral and Energy Resources (MER) 97.  
Political Science (Pol. S.) 1, 2, 3, 7, 110, 120, \*137, \*150, \*151, 160, 170, 171.  
Psychology (Psych.) 1, 141, 151, \*170.

Resource Management (Res. M.) 1.  
Sociology & Anthropology (Soc. & A.) 1, \*5, 7, \*51, 121, 122, 123, 125, 131, 132, \*135, 136, 137, \*138, 140, \*145, 152, \*155, \*156, 157, 158, 159, \*160, 162.  
Recreation and Park (Rc. & Pk.) 43.  
Women's Studies (Wm. St.) \*40.

### **Cluster C Courses:**

Agricultural Microbiology (Ag. Micro.) 141.  
Astronomy (Astro.) 106.  
Biology (Biol.) 1, 2, 3, 4.  
Chemistry (Chem.) 11, 12, 15, 16, 17, 18.  
Computer Science (C.S.) 1, 5.  
Economics (Econ.) 125.  
Geography (Geog.) 7, 107.  
Geology (Geol.) 1, 2, 3, 4, 7.  
Human Nutrition and Foods (HN&F) 71.  
Mathematics (Math.) 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, 168.  
Multidisciplinary Studies (MDS) 2, \*60, 70, 90, 91.  
Philosophy (Phil.) 11.  
Physics (Phys.) 1, 2, 7, 8, 11.  
Political Science (P. Sci.) 11, 12.  
Statistics (Stat.) 101

### **Approved 200-Level Courses**

No 200-level courses are included in Clusters A, B, and C because they are deemed to be not ordinarily appropriate for the Liberal Studies Program. However, a student may petition to take one 200-level course, from the list of approved courses indicated below, in fulfillment of the LSP requirement for each of the three cluster areas. The student must petition through his/her adviser for approval. This can be accomplished with the use of a standard petition form filled out by the student, approved by the adviser, and placed in the student's file.

### **Cluster A Courses:**

Communications Studies 230.  
English 211, 220, 235, 236, 240, 250, 255, 256, 261-268, \*288.  
History 200, 204, 205, 206, 207, 208, 214, \*225, \*226, 231, 232, \*245, \*246, \*251, \*252, 253, 259.

### **Cluster B Course:**

Communications 221.  
Economics 211.  
History 208, 211, \*227, \*229, \*230, 259.  
Health Education \*290.  
Social Work \*247.  
Political Science \*235, \*250, \*251, \*254, \*255, \*256, \*258.

### **Academic Advising**

When you enter West Virginia University, you are assigned an academic adviser. Your adviser assists you as you prepare your schedule, assigns classes as required by your degree program, and certifies your study list to the Director of Admissions and Records. Your adviser is also expected to give you

advice and sympathetic guidance. You are expected to meet with your adviser to discuss your academic problems.

Your adviser may call you to have a conference if you have excessive absences. The adviser may make recommendations and adjustments if such adjustments are feasible. If your adviser cannot resolve your attendance problem with you, your case is reported to the Dean of your college or school.

If you are a student in Arts and Sciences, Human Resources and Education, or Social Work, you are admitted to a pre-program in a particular major. You remain in a pre-program and are advised by a special academic adviser until you fulfill all requirements for admission to the degree program.

You may choose to enter other pre-programs. Normally these programs require you to complete 30-68 credits before you are admitted to a degree program. If you select one of these pre-programs, you are advised through the University Advising Center. The Center has professional advisers for the following areas: pre-business and economics, pre-journalism, pre-medical technology, pre-nursing, pre-pharmacy, and pre-physical therapy.

Students who are undecided on a career field may enroll in general studies. If you choose this option, you can explore several career and academic options before you make a final choice. While you explore these different areas, you enroll in courses that fulfill general University requirements for graduation and also provide a solid liberal arts foundation. You can be a general studies student for four semesters or until you are admitted to a degree program. If you select general studies, your adviser will be located in the University Advising Center. The Center staff also advises part-time and special (non-degree) students.

### **Transfer of Credits**

If you decide to take course(s) at another school, you must have written approval from your adviser, your dean, and the Director of Admissions and Records or his designee. To receive such approval, you must have a C average. All approved college-level work is accepted for transfer from institutions in the WV state systems, provided the above requirements have been met. Only grades of C or higher are accepted from institutions not in the state system.

### **Branch, Community, and Junior Colleges**

You may receive credit for seventy-two hours of credit and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education. Such courses may apply toward a baccalaureate degree at WVU if they are the equivalent of a course at WVU. You may also transfer credit for college-parallel courses taken at community colleges or junior colleges that are not a part of the West Virginia system of higher education. However, you will receive credit only for those courses for which you have earned a grade of C or higher. The hours that you transfer from a community college or junior college are normally limited to a maximum of 72 hours of lower division courses.

### **Requirements as to Residence**

If you decide to transfer to WVU from another institution of higher learning, then you should transfer no later than the start of your third year. Under no circumstances will a student who enters WVU later than October 1 in any year be allowed to receive a degree at the next commencement.

In some special cases, you can leave WVU at the end of your third year, and still receive your degree from WVU. You must enter another accredited institution with the purpose of taking a combined program that will lead to two degrees or prepare for graduate study. Before you leave, you must apply to the Academic Standards Committee of your college to request permission to do the work of the fourth year, or a part thereof, at the other institution but still receive the degree from WVU. You will receive your degree when you present the proper records from the other school.

If you are a transfer student who has completed all of your undergraduate work in another school in the West Virginia system of higher education, then you must complete either your last 30 hours of work at WVU or at least 36 hours of work at WVU of which 16 of the last 32 hours must be on campus. If you are a transfer student whose undergraduate work has been completed outside the West Virginia system of higher education, then you must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. You may be required to earn up to 15 hours in your major field regardless of the number of hours or the nature of the courses transferred.

### **Work Done Out of Residence**

It is WVU's policy to discourage taking regular residence courses in absentia. If you begin a course at WVU but fail to complete it due to illness or some other acceptable reason, you may receive permission to complete the work in absentia. The permission must be granted by the Academic Standards Committee of the college or school concerned, and the work must be done under the guidance of a WVU professor. Credit for the course in such cases is allowed only upon a report of a grade of C or better on the final examination. This regulation does not apply to WVU off-campus courses.

If you fail a course (receive a final grade of F) taken at WVU, you must repeat the course at WVU to receive credit for that course. The dean of the college or school in which you are enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in the your folder authorizing the exception and explaining its basis.

You should be aware of the requirements for residence and your specific degree requirements described in the catalog when transferring credit from other institutions. If you are transferring credit from institutions outside the West Virginia state system of higher education, WVU will only accept credit for courses in which you earned a grade of C or higher provided other conditions above have been met.

If you have been suspended for academic reasons and take courses at other institutions during your suspension, you cannot automatically transfer these courses to WVU upon readmission. If you complete the first semester after your suspension with a satisfactory performance (C average or better for at least 12 hours), the appropriate credit will be entered in your record. The dean of your college or school and your adviser must certify that the above conditions have been met.

### **Substitution for Required Courses**

You may want to substitute one course for another that is in your curriculum or may be required for your degree. In order to do this, you must get written permission from the Academic Standards Committee of your college or school.

## Credit Examinations

### Advanced Placement Program (AP)

West Virginia University encourages you to work to your full capacity and to earn your degree at your own learning speed. As a high school junior or senior, you can enter the University early, as previously explained, or you can take college-level courses at your school in conjunction with the College Entrance Examination Board (CEEB). The Advanced Placement Service administers three hour examinations to show competence equal to that received by taking the actual college course. The following chart shows the subject areas, the necessary test scores, and the WVU equivalent courses.

### College Level Examination Program (CLEP)

If you apply for admission to WVU and you have gained a significant level of maturity through your life experiences, you may gain college credit for these educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. A policy of the West Virginia Board of Regents allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition and freshman English. Up to 34 hours of general education credit may be earned for successful performance on the CLEP General Examinations. Although this program was designed primarily for adults, exceptionally well qualified high school seniors may use the CLEP Program. If you are interested, write to the Director of Admissions and Records for additional information. The following table indicates the areas in which WVU grants credit based on the minimum score required. **It should be noted that no one is eligible for CLEP credits after he/she has enrolled in any institution of higher learning.**

If you are a veteran, you may receive Advanced Placement for specific military experience. Veterans should contact the Director of Admissions and Records for specific information.

### Credit by Examination

If you are currently enrolled, you may receive credit for a course or courses if you can demonstrate competency in the course content. The department offering the course determines evaluation standards for the student's competency. If skill and cognitive abilities are components of the course, then both are evaluated. Credit is given only when a satisfactory degree of competency is shown.

A college, school, or department may ask you to prepare a self-evaluation statement. The purpose of the statement is to determine the competency you believe you have and how you achieved it.

If you are interested in credit by examination, contact the dean in the college or school offering the course. The details and procedures will be explained to you at that time.

### Credit for Correspondence Work

You may receive credit for correspondence work in non-laboratory courses. You have to meet certain conditions that govern this credit:

- A maximum of 30 hours are acceptable.
- The work must be from accredited institutions.
- The institution must accept the credit toward its own degrees.
- WVU must ordinarily accept that institution's residence work.

## Advanced Placement Program (AP)

Subject	Test Score	WVU Equivalent
<b>ART:</b>		
Art History .....	3	To be determined by Division of Art
BIOLOGY .....	3	Biol. 1 and 2 (3 hr.) Biol. 3 and 4 (1 hr.)
BIOLOGY .....	4	Biol. 15 (4 hr.)
CHEMISTRY .....	3	Chem. 15 and 16 (8 hr.)
COMPUTER SCIENCE .....	3	Non-specific C.S. 3 hr. (Test A) Non-specific C.S. 6 hr. (Test A & B)
<b>ECONOMICS:</b>		
Econ., Microeconomics .....	3	Econ. 54 (3 hr.)
Econ., Macroeconomics .....	3	Econ. 55 (3 hr.)
<b>ENGLISH:</b>		
English Lang. & Comp.....	3	Engl. 1 (3 hr.)
English Lang. & Comp.....	4 or 5	Engl. 1 and 2 (6 hr.)
Lit. & Comp. ....	3	Engl. 35 (3 hr.)
Lit. & Comp. ....	4 or 5	Engl. 35 and 36 (6 hr.)
<b>FOREIGN LANGUAGES:</b>		
French Lang. ....	3	Fr. 103 and 104 (6 hr.)
French Lit. ....	3	Fr. 191 (3 hr.)
German Lang. ....	3	Ger. 103 and 104 (6 hr.)
Latin—Vergil .....	3	Class. 191A (3 hr.)
Latin—Catullus-Horace.....	3	Class. 191B (3 hr.)
Spanish Lang. ....	3	Span. 103 and 104 (6 hr.)
Spanish Lit. ....	3	Span. 191 (3 hr.)
<b>HISTORY:</b>		
European .....	3	Hist. 2 (3 hr.)
American .....	3	Hist. 52 and 53 (6 hr.)
<b>MATHEMATICS:</b>		
Math., Test AB.....	3	Math. 14 (4 hr.)
Math., Test AB.....	4 or 5	Math. 15 (4 hr.)
Math., Test BC .....	3	Math. 15 (4 hr.)
Math., Test BC .....	4 or 5	Math. 15 and 16 (8 hr.)
MUSIC .....	3	To be determined by Div. of Music
<b>PHYSICS:*</b>		
Phys., Test B.....	3	Phys. 1 (4 hr.)
Phys., Test B.....	4 or 5	Phys. 1 and 2 (8 hr.)
Phys., Test C.....	3	Phys. 11 (4 hr.)
Phys., Test C.....	4 or 5	Phys. 11 and 12 (8 hr.)
<b>POLITICAL SCIENCE:</b>		
American Government .....	3	Pol. Sci. 2 (3 hr.)
Comparative Government .....	3	Pol. Sci. 1 (3 hr.)

\*NOTE: Students receiving AP credit for any Physics course will have to register for and complete the corresponding physics labs by special arrangement with the Department of Physics.

## College Level Examination Program (CLEP)

General Examinations	WVU Equivalent	Minimum Score Required
English Comp. (with essay)	English 1 (3 hr.)	590
English Comp. (multiple choice)	No credit	
Humanities	Untranslated LSP A (6 hr.)	500
Mathematics	Untranslated LSP C (4 hr.)	500
Natural Sci.	Untranslated LSP C (6 hr.)	500
Social Sci. & Hist.	Untranslated LSP B (6 hr.)	500
<b>Subject Tests:</b>		
American Lit.	Engl. 24 (3 hr.)	59
Analysis & Interpret. of Lit.	Engl. 35 (3 hr.)	59
College Comp.	No credit	—
English Lit.	English 22 (3 hr.)	60
Freshman Engl.	No credit	—
College French (levels 1 and 2)	Fr. 1 and 2 (6 hr.)	44
	Fr. 3 and 4 (6 hr.)	55
College German (levels 1 and 2)	Ger. 1 and 2 (6 hr.)	43
	Ger. 3 and 4 (6 hr.)	54
College Spanish (levels 1 and 2)	Span. 1 and 2 (6 hr.)	45
	Span. 3 and 4 (6 hr.)	54
American Govt.	Pol. Sci. 2 (3 hr.)	50
American Hist. I	Hist. 52 (3 hr.)	49
American Hist. II	Hist. 53 (3 hr.)	49
Western Civilization I	Hist. 1 (3 hr.)	50
Western Civilization II	Hist. 2 (3 hr.)	50
Educational Psychology	Ed. P. 103 (3 hr.)	49
General Psychology	Psych. 1 (3 hr.)	50
Human Growth and Development	CD&FS 10 (3 hr.)	51
Intro. Macroeconomics	Econ. 55 (3 hr.)	50
Intro. Microeconomics	Econ. 54 (3 hr.)	50
Intro. Sociology	Soc. & A. 1 (3 hr.)	50
College Algebra	Math. 3 (3 hr.)	48
Trigonometry	Math. 4 (3 hr.)	54
College Algebra/Trig.	Math. 14 (4 hr.)	50
Calculus with Elementary Functions	Math. 15 (4 hr.)	49
General Biol.	Biol. 1 and 2 (6 hr.) (no credit for the labs)	49
General Chem.	Chem. 15 (4 hr.)	50
Computers and Data Processing	C.S. 1 (4 hr.)	49
Intro. to Management	Manag. 105 (3 hr.)	50
Intro. Accounting	Acctg. 51 and 52 (6 hr.)	54
Intro. Business Law	B. Law 111 (3 hr.)	51
Intro. Marketing	Mrktg. 111 (3 hr.)	50

## Second Bachelor's Degree

To earn a second baccalaureate degree, you must earn at least 30 credits beyond the requirements for your first degree. You must satisfy all requirements, departmental or otherwise, for the second degree. You cannot receive a second bachelor's degree if you have not met the University's residence requirement. (See "Requirements as to Residence.")

If you want to earn two baccalaureate degrees at the same graduation date, then you must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. You must be admitted to both degree programs. Furthermore, you must provide the Office of Admissions and Records written proof that you do, in fact, have the approval of both colleges or schools.

## Graduate Credit Via Senior Petition

You may begin graduate study early through the University's senior petition policy. Come to the Office of Admissions and Records and ask for the senior petition form. After you get the form, you must have it signed by your adviser and the chairperson of the graduate unit offering the course.

The University has certain policies for you to follow in order to enroll in a graduate course for graduate credit. The policies are:

- Senior petition applies only to courses numbered 300-399.
- You must be within 12 hours of receiving your bachelor's degree, and your grade-point average must be 3.0 on a 4.0 scale.
- You can only receive 12 graduate hours through the senior petition.
- You must have the proper signatures on your senior petition by the time you enroll in the petitioned courses.

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that you receive graduate credit for these courses on your permanent record. The dean of the college or school in which you are taking graduate courses must approve any exceptions to the policy.

**Note:** If you receive graduate credit for a course, the credit for that course does not count for your undergraduate degree.

## Visitors

Full-time University students may attend classes as visitors. To visit a class, you must have permission in writing from your adviser and the instructor of the course. A member of the administration, teaching staff, or other regular University employees may also attend classes as visitors. These individuals also must have the written permission from their department and the instructor of the class.

As a visitor, you do not receive credit for that class. You may not apply for an advanced standing examination in a class in which you were a visitor.

## Auditors

You may register for courses as an auditor and pay full fee for the course. In this situation, you do not receive credit for the course. If you audit a course in one semester, you must let one semester pass before you enroll in the course for credit. You may change your status from audit to grade or grade to audit during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The instructor may delete an auditor from a class list or grade report if attendance requirements are not

met. The instructor will direct the Office of Admissions and Records to remove the auditor from the class list or grade report.

**Summer Sessions**

WVU has two six-week sessions. Summer Session One begins in the middle of May and ends on June 30. Summer Session Two begins on July 1 and ends the second week of August. Requirements for admission and work performance for the Summer Sessions are the same as for the regular semesters.

You may earn credit toward a baccalaureate, masters, doctoral, or professional degree in the Summer Sessions. Summer offerings vary from year to year. For complete information concerning course offerings during the Summer Sessions, consult the *Summer Session Schedule of Courses*.

**Evening Classes**

If you are unable to attend classes during the day, the University offers a program of evening courses taught by regular faculty. These courses carry full college credit, and many may be counted toward graduate degrees.

**Classification of Students**

WVU undergraduates are classified as freshmen, sophomores, juniors, or seniors. These classifications are based upon the number of hours completed toward the student's degree. The classifications are as follows:

- Freshman classification ..... 1-28 hours, inclusive
- Sophomore classification ..... 29-58 hours, inclusive
- Junior classification ..... 59-88 hours, inclusive
- Senior classification ..... 89 or more semester hours, inclusive

**Grade-Point Average**

All academic units of the University require minimum standards of scholastic quality. Your grade-point average is computed on grades earned in courses taken at WVU and institutions in the WV system of higher education only. To be eligible to receive a baccalaureate degree, you must have a grade-point average of at least 2.0 at the time of graduation. Some degree programs require a higher grade-point average overall in the major courses. Your minimum grade-point average is based on all work for which you received letter grades other than W, WU, and P.

You must make certain that you know your grade-point standing. You can obtain the necessary information concerning your grade-point standing from the dean of your college or school. To determine your grade-point average, use the method described in the section on grade points.

**Graduation with Honors**

WVU recognizes distinguished academic achievement by awarding degrees cum laude, magna cum laude, and summa cum laude. This distinction can be on the initial or second baccalaureate degrees. All candidates for a baccalaureate degree with a grade-point average of 3.8 or higher graduate summa cum laude. Those with a grade-point average of less than 3.8, but equal to or above 3.6, graduate magna cum laude. Those with a grade-point average of less than 3.6, but equal to or above 3.4, graduate cum laude.

1. To determine your grade-point average for honors, you must start with the penultimate (next to last) semester or summer session and continue in reverse chronological order until at least 80 graded hours excluding credits earned with a P have been counted. This work must have been completed at WVU or a school in the West Virginia system of higher education. If, in order to get the required number of hours, you have to include any part of a semester or summer session, then you must use the work of the whole semester or summer session. If it is to your advantage to do so, you may use the cumulative grade-point average on all work completed at WVU or a BOR institution to determine graduation honors. In all cases, the total hours completed must be 80 or more.

2. If you have not completed 80 semester hours at WVU or a BOR institution by the end of the penultimate semester, you may petition your dean for a review of your individual case. After review, the dean will forward all requests for exceptions to the regulation to the Provost for the final decision.

3. The recognition of graduation with honors, summa cum laude, magna cum laude, or cum laude, is made on your diploma, in the Commencement Bulletin, and on your permanent record (transcript).

If you are completing your second baccalaureate degree at the University, you are still eligible to receive the graduation honors of summa cum laude, magna cum laude, or cum laude. The following regulations govern these awards:

The grade-point average for graduation with honors is computed on the last 80 semester hours, excluding credits earned with a grade of P or S, completed at WVU or a West Virginia Board of Regents institution.

At least 30 of the 80 hours must have been completed in the second degree program through the penultimate (next to last) semester or summer session. The remainder of the 80 semester hours count from the student's first baccalaureate degree program, counting in reverse chronological order from the semester or summer session of graduation. If, in order to total the required number of hours, it is necessary to include any part of a semester or summer session, the work of the whole semester or summer session is included.

Subject to the above conditions, second baccalaureate degree may be awarded summa cum laude, magna cum laude and cum laude. If you achieve a grade-point average of at least 3.8 in both the post baccalaureate hours and the last 80 hours, you graduate summa cum laude. If your grade-point average is less than 3.8, but equal to or above 3.6, in both the post baccalaureate hours and the last 80 hours, you graduate magna cum laude. If your grade-point average is above 3.4 in both post baccalaureate hours and the last 80 hours, you will graduate cum laude.

The recognition of graduation with honors, summa cum laude, magna cum laude, or cum laude, is made on your diploma, in the commencement bulletin, and on your permanent record (transcript).

## **Academic Progress**

### **Courses**

As a general rule, most courses taught at WVU extend for one semester, although some extend for two semesters. Credit is not awarded for a course if you do not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant an exception. Grades reported at the end of the first semester in a two semester course are merely an

indication of the quality of the student's work to that point. Credit is not given for that part of the course completed.

Courses taught in the summer sessions carry the same credit value as fall and spring semester courses.

## Evaluation of Student Progress

Your progress is evaluated by a variety of methods. The measurement and evaluation of learning are consistent with the objectives of the course and provide the opportunity for you and your instructor to evaluate your progress. The University discourages evaluation by final examination only.

You are responsible for all materials presented or assigned in scheduled instructional sections. If you do not complete all assigned work, you may earn an incomplete (I) or a failing grade (F).

The last week of each semester of the academic year is designated finals week. Final examinations for the summer sessions are given on the last day of classes. The *Schedule of Courses* gives the date and times for final examinations.

Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week. Evening classes have their final exams the last meeting of the class preceding finals week.

If you take a section of a multi-section course, you may be required to take the departmental final examination. This test is given during the regular final examination period.

## Grading System

- A — excellent (given only to students of superior ability and attainment)
- B — good (given only to students who are well above average, but not in the highest group)
- C — fair (average for undergraduate students)
- D — poor but passing (cannot be counted for graduate credit)
- F — failure
- I — incomplete
- W — withdrawal from a course before the date specified in the University Calendar. Students may not withdraw from a course after the specified date unless they withdraw from the University
- WU — withdrawal from the University doing unsatisfactory work
  - P — pass (see Pass-Fail Grading below)
  - X — auditor, no grade and no credit
- CR — credit but no grade
- PR — progress. Final grade at end of the second semester (Medical Center)
- S — satisfactory
- U — unsatisfactory (equivalent to F)
- \*F — unforgivable F, not eligible for D/F repeat policy

## Pass-Fail Grading

Pass-fail grading encourages you to take elective courses not related to your degree concentration. Pass-fail grading also facilitates grading in competency based courses which may be an integral part of your program.

**Student Option.** Any full-time student who has completed 15 hours or more and who has maintained a 2.0 grade-point average may take a maximum of four (4) hours each semester or summer session on a pass-fail basis. Any course taken on a pass-fail basis must be a free elective. You are limited to a total of 18 hours of pass-fail credit in your collegiate career. Unless otherwise indicated, courses in your major, courses in other subjects that are required by the major, and courses taken to satisfy University, college, school, or departmental requirements are excluded from pass-fail. For example, courses elected to satisfy the English, Liberal Studies Program (LSP), or foreign language requirements may not be taken for pass-fail grading.

If you elect a course on a pass-fail basis, you are graded as a regular student. The instructor turns in the appropriate letter grade to the Office of Admissions and Records. This letter grade is then converted to a P on the basis of A, B, C, or D for a pass and F for a fail. The grade of P does not affect your grade-point average. However, any F grade affects your grade-point average whether it is a regular grade or a pass-fail grade.

You choose the option of pass-fail grading for a course during the registration period. Once the registration period has ended, you may not change the grade status in the course.

**College or School Option.** A department or unit may designate any performance or competency based course as exclusively pass-fail. To institute this, the college or school must have the approval of the Faculty Senate. Courses offered only as pass-fail are not included in the maximum of 18 hours that may be freely elected under the student option.

## Grade Points

Each letter grade has a numeric value. Grade points are based on this number value and the credit hour value of the course.

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade-point average is computed on all work for which you registered, with the following exceptions:

Courses with a grade of W, WU, P, S, and X carry no grade value.

The grade of incomplete (I) initially carries no grade value. The grade of I is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. To remove the grade of I, you do not register for the course again; instead, you arrange to submit incomplete or supplemental work to the original instructor of the course. When you receive the grade of I and later remove the incomplete grade, the grade-point average is calculated on the basis of the new grade. If you do not remove the I grade within the next semester in which you are enrolled, the grade of I becomes an F (Failure). The Academic Standards Committee of the appropriate college or school may allow you to postpone removal of the I grade if you can justify a delay.

If you are working toward teacher certification, you are responsible for every registration in a course in which the grade of A, B, C, D, F, WU, P, X, or I is received.

Students like to know how to calculate their overall and semester grade-point averages. The following example shows how to do it. Assume you are registered for 16 hours and receive the following grades in these courses:

English 1.....	B	Mathematics 3 .....	A
Geology 1 .....	C	Political Science 1 .....	B
Spanish 1 .....	D	Orientation 1.....	P

Course	Credit	Grade	Grade Value	Credit X Grade Value*	Grade-Points
English 1	3	B	3	3 × 3 =	9
Geology 1	3	C	2	3 × 2 =	6
Spanish 1	3	D	1	3 × 1 =	3
Mathematics 3	3	A	4	3 × 4 =	12
Political Science 1	3	B	3	3 × 3 =	9
Orientation 1	1	P	0	1 × 0 =	0
	16			Total Grade Points**	40
				Total Credit Hours***	15

\*Multiply the credit value by the grade value (see table above)

\*\*Add the Total Grade Points

\*\*\*Divide the Total Grade Points by the credit hours that carry a grade value.

$$\frac{39}{15} = \text{grade-point average}$$

## D/F Repeat Policy

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate degree. If you earn a D or F in a course at WVU taken no later than the semester or summer session registration when you reach a cumulative total of 60 hours attempted, you are eligible to D/F repeat that course. You must repeat the course at WVU. You will have only one opportunity to improve your original grade. The new grade becomes the grade that counts, even if your performance is worse than the original grade.

When you have D/F repeated a course, the following happens:

1. The original grade is disregarded for the purpose of determining your grade-point average, hours passed, and hours attempted.
2. The original grade is not deleted from your permanent record.
3. The second grade is entered on your transcript and marked repeat in the semester that you repeated the course.
4. You can exercise your right under the D/F repeat policy at any time before you receive your initial baccalaureate degree (effective date: December 1985).

If you get a grade of F in a course for disciplinary reasons or for cheating, the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on your permanent record by an \*F and is calculated in your grade-point average.

## Grade Reports

During the seventh week of classes in the fall and spring semesters, instructors submit a report of all undergraduate students earning grades of D or F. These grades are used for counseling and are not recorded on the student's official permanent record. These reports are sent first to the Office of Admissions and Records and then to the student, the student's adviser, and the dean of the college or school in which the student is enrolled.

Final grades are reported within 48 hours after the end of the final examination. The instructor submits the grade reports to the Office of Admissions and Records.

The final grades of all seniors provisionally approved for graduation at the close of each semester or summer session are reported to the deans of their

colleges or schools. The final grades of all graduate students provisionally approved for graduation at the close of each semester or summer session are given to the Assistant Vice President for Curriculum and Instruction. Special report forms for this purpose are supplied by the Office of Admissions and Records.

At the end of each semester or at the close of each summer session, a report of each student's work is prepared for that period and sent to the student.

### **Transcripts of Academic Records**

As a student, you are entitled to one free copy of your official transcript. Each additional copy costs three dollars, payable in cash or money order. You may request, in person, an on-the-spot transcript at a cost of five dollars. Priority service is not available at all times. Because of demand, it may take two to three weeks to process an application for a regular transcript at the close of a semester or summer session. At other times, it is the policy of WVU to process all regular transcript requests within 48 hours of receipt of the request.

If you owe money or have some other financial obligation to any unit of the University, you forfeit your right to claim a transcript of your record until you meet your obligation. Additionally, you also forfeit the right to claim your diploma until these financial obligations have been met.

When you apply for a transcript, you must furnish your last date of attendance and your student number. Be sure to indicate the full name under which you were enrolled.

Requests for transcripts must be made in writing to the Office of Admissions and Records. We can not accept telephone requests because of the risk of the security of your record.

### **Final Grade Appeals**

Students have the right to appeal final course grades which they believe reflect a capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, color, creed, sex, age, political affiliation, handicap, or national origin. The grade appealed shall remain in effect until the appeal procedure is completed, or the problem resolved. The primary intent of this procedure is to provide a mechanism whereby a student might appeal a failing grade or a grade low enough to cause the student to be eliminated from some program or to require the repetition of a course. Grade appeals that do not meet this classification are not precluded.

Step 1. The student shall discuss the complaint with the instructor involved prior to the midsemester of the succeeding regular semester, whether the student is enrolled or not. If the two parties are unable to resolve the matter satisfactorily, or if the instructor is not available, or if the nature of the complaint makes discussion with the instructor inappropriate, the student shall notify the chairperson of the instructor's department or division (or, if none, the dean). The chairperson or dean shall assume the role of an informal facilitator and assist in their resolution attempts. If the problem is not resolved within 15 calendar days from when the complaint is first lodged, the student may proceed directly to Step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal within 30 calendar days from when the original complaint was lodged. Copies of this document shall be given to

the instructor and to the instructor's chairperson (or, if none, to the dean). If, within 15 calendar days of receipt of the student's signed document, the chairperson does not resolve the problem to the satisfaction of the student, the student will forward the complaint to the instructor's dean (see Step 3).

Step 3. Within 15 calendar days of receipt of the complaint, the instructor's dean shall make a determination regarding the grade, making any recommendation for a grade change to the instructor involved. If the instructor involved does not act on the dean's recommendation, or if the student is in disagreement with the decision of the dean, the dean will refer the case to a representative committee, appointed by the dean, for final resolution. This committee shall consist of three or more faculty members, including at least one person outside the instructor's discipline.

1. Upon receiving an appeal, the committee will notify in writing the faculty member involved of the grade challenge which shall include a statement of the facts and evidence to be presented by the student.
2. The committee shall provide to the faculty member involved and the student making the appeal written notification of their right to appear at a hearing to be held before the department or college or school representative committee, together with the notice of the date, time, and place of the hearing.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. The final decision of this committee shall be forwarded to the instructor and to the dean involved. If the decision requires a change of grade, the instructor shall take action in accordance with the committee's decision.
5. If the instructor does not act within five days, the dean shall make any necessary grade adjustment.
6. In the case of grade appeals, the dean functions as the President's designee; therefore, implementation of this decision shall end the appeal procedure.

## **Absences**

If you are absent from class for any reason, you are responsible for all work that you missed. Absences may jeopardize your grade(s) in that class or possibly the ability to continue in that course.

Instructors are responsible for keeping an accurate record of students enrolled in their classes and their attendance. If an instructor uses attendance records in determining the final grade in a course, then this fact must be announced to the students in writing within the first five class meetings.

## **Absence from Examinations**

You are required to take all regular examinations in a course. If you attend a course all semester but you do not take the final examination and you do not have the instructor's permission to miss it, the instructor may give you a grade of zero for the examination and report a grade of F for the course. If, however, the instructor believes your absence was necessary, he/she has the option to report a grade of incomplete (I).

If your absence from a regularly scheduled examination was due to illness, an authorized University activity, or another reason approved by your dean, you have the opportunity to make up the examination.

## **Withdrawals**

### **Withdrawal From Classes**

**Deadlines:** Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines are published in the *University Schedule of Courses* each semester. If you follow all established University procedures and withdraw before the published deadline, you will receive a W on your transcript. Grade-point averages are not affected in any way by this mark.

#### **Procedures:**

1. Before withdrawing from individual classes, consult your adviser to determine:

- Whether your course load would be reduced below the minimum requirements set by your college or school. If so, you must get permission from the Committee on Academic Standards of your college or school before you submit the course adjustment form.

- Whether your course load would be reduced below the minimum number of hours required to qualify for financial aid, varsity athletic competition, or international full-time student status;

- Whether the courses to be dropped are required to fulfill academic probationary conditions;

- Whether the courses from which you want to withdraw might be corequisite with other courses you are taking, or prerequisite to other courses required for the next term.

2. Ask your adviser to sign the University course adjustment forms and then submit the forms to the Office of Admissions and Records.

### **Withdrawal From the University**

**Deadlines:** You may withdraw from the University any time before the last day of a semester or session on which regular classes are scheduled to meet. If you withdraw before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) you receive grades of W in all of your courses for that semester or session. After these deadlines, you will receive grades of W in those courses in which you made satisfactory progress and grades of WU for courses in which your progress had been unsatisfactory.

#### **Procedures:**

1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all financial obligations and for following established procedures. This includes the completion of forms and the delivery of the completed forms to appropriate officials. Students not fulfilling their financial obligations may have difficulty withdrawing from the University. A withdrawal becomes official only after the forms have been recorded by the Director of Admissions and Records.

2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons still must send notification of their intention to withdraw to the Office of Student Life. The notice should be verified in writing and the student ID and PRT cards enclosed.

3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Student Affairs office (or dean's office of an off-campus

instructional unit). Withdrawal procedure is explained at that time. Identification (ID) and PRT cards must be presented.

4. With the help of their academic advisers, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

## **Academic Leave of Absence**

WVU offers undergraduate students in good standing the opportunity to request an academic leave of absence. The academic leave of absence is designed for the student who wishes to be away from his/her academic endeavors at WVU for one or more semesters, but intends to return at a later date. The academic records of students on an academic leave of absence remain in an active status. While on an academic leave of absence, the student retains the right to use certain campus facilities such as the Reading Lab, Writing Lab, Student Counseling Service, and Career Services. When a student decides to return to WVU after his/her academic leave of absence, application fees are waived. While on an academic leave of absence, the student receives communications from WVU. Academic advisers and the Office of Admissions and Records can provide additional details about an academic leave and eligibility requirements.

## **Re-Enrollment After Withdrawal**

After you withdraw from WVU in two consecutive semesters (excluding summer sessions), you may not register for further work without approval of the dean of the college or school in which you want to register and subject to conditions set by that dean.

## **Committee on Academic Standards**

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority, the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

## **Probation, Suspension, Readmission, Expulsion Policy**

### **Uniform Probation**

Students with a cumulative grade-point average below 2.0 are notified on semester grade reports that their academic performance is unsatisfactory and that they are on probation.

A unit may require a grade-point average above 2.0 or other academic requirements for purposes of determining probation or meeting degree requirements.

### **Maximum Allowable Grade-Point Deficiency\***

<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>	<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	6
50-54	13		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education, excluding grades of P exclusive of the D-F Repeat Policy.

### **Uniform Academic Suspension Regulations**

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension at any time. Normally, students are suspended at the end of a semester or summer school session. Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester but will not exceed one calendar year from the date of suspension.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at West Virginia University upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met. A student who has preregistered and is subsequently suspended shall have his/her registration automatically cancelled.

#### **Reinstatement After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for reinstatement. The college or school petitioned shall establish the terms of reinstatement for successful student petitions.

After one calendar year from the effective date of suspension, any student who has been suspended one time shall, upon written application, be reinstated to the University and to the college or school in which the student

was previously enrolled, unless the student petitions for admission to another college or school. The college which reinstates the student removes the student's suspension restriction in Admissions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student and that college stipulate otherwise. Each college or school shall have the right to establish requirements or performance expectations.

After the second or any subsequent suspension, a student may be reinstated to the University provided that a college or school agrees to reinstate the student. After a student has been reinstated, he/she must apply for readmission through the Office of Admissions and Records.

## **Appeal of Suspension**

Imposition of academic suspension based on grade-point average, failure to meet the conditions previously specified for removal of academic probation, or failure to meet the conditions of admission, may be appealed under the following conditions:

1. The student may appeal individual final course grades and, if successful, may be reinstated.
2. The student may make an appeal to the appropriate dean based on erroneous calculation of the grade-point average or on erroneous calculation of the time period within which a grade-point average must be achieved. The decision of the dean, as the President's designee, is final.

Students have the right to appeal academic suspensions based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, color, creed, sex, age, political affiliation, handicap, or national origin. At the dean's discretion, suspensions may remain in effect until appeal procedures are completed.

Step 1. The student shall discuss the complaint with the dean involved within 30 calendar days of the action taken. If the two parties are unable to resolve the matter satisfactorily within 15 calendar days, the student may proceed to Step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document shall be given to the University Committee on Student Rights and Responsibilities. Within 15 calendar days of receipt of the appeal, the University Committee on Student Rights and Responsibilities will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.
2. The student may be advised by a person of his/her choice from within the institution; likewise, the academic officer recommending suspension may have an adviser from within the institution. Such advisers may consult with but may not speak on behalf of their advisees or otherwise participate.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The decision of the University Committee on Student Rights and Responsibilities will be sent to the dean involved and the student within 7 calendar days of the hearing. If the decision requires a reinstatement, the dean will take action in accordance with the Committee's decision. If the decision of the Committee is to uphold the suspension, the student's appeal must reach the appropriate Vice President within 30 calendar days of receipt of the Committee decision. The Vice President will review and make a decision regarding the suspension within 15 calendar days of receiving the student's appeal. The decision of the Vice President, as the President's designee, is final.

### **Uniform Academic Dismissal Regulations**

Academic dismissal from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University. Academic dismissal can result from repeated failure to make academic progress and/or to meet probationary terms set forth in writing by the student's college or school.

After five calendar years from the effective date of academic dismissal, any student who has been dismissed shall, upon written application, be considered for reinstatement to the University, with the terms of reinstatement to be established by the college or school entered. Failure to meet these terms will result in permanent academic expulsion.

### **Appeal of Dismissal**

**Note:** The procedures and appeals described do not apply to dismissal as a sanction for academic dishonesty.

The time limitations stated herein are suggested in order to render a decision as expeditiously as possible. In the case of University holidays or absence of person(s) involved, reasonable delays may be expected.

A decision to dismiss a student for failure to meet academic standards (as distinguished from academic dishonesty) can be made only after the student has been counseled by the appropriate departmental committee or representative, with counseling to take place as soon as possible after discovery of the problem. After the student is given a reasonable opportunity to correct deficiencies, there shall then be a formal review of the student's status by the appropriate departmental or program committee to determine whether the student shall be retained or dismissed. The student may provide the committee written documentation of his/her efforts to correct deficiencies. A committee recommendation for dismissal, including any documentation provided by the student to the committee, shall be forwarded to the student's dean and to the student. Within 15 calendar days of receipt of the committee's recommendation, the dean shall inform the student and the student's department/program of his/her decision. A decision to dismiss shall specify whether the dismissal is from the program or college/school. The dean may also dismiss a student from the institution if the student does not meet institutional standards.

Dismissal, based on grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution:

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15

calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the appropriate Vice President within 15 calendar days of failure to resolve the matter at the dean's level. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. The decision of the Vice President, as the President's designee, shall be rendered within 15 days of receipt of the student's appeal and is final.

Dismissal, based on failure to meet academic requirements or performance standards irrespective of grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution. Students have the right to appeal academic dismissal based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, color, creed, sex, age, political affiliation, handicap, or national origin.

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the University Committee on Student Rights and Responsibilities, which, within 15 calendar days of receipt of the student's appeal, will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of date, time, and place of hearing.
2. The student may be advised by a person of his/her choice from the institution; likewise, the academic officer recommending academic dismissal may have an adviser from the institution. Such advisers may consult with but may not speak on behalf of their advisees or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within 7 days. The University Committee on Student Rights and Responsibilities' recommendation for dismissal must be reviewed by the appropriate Vice President, who may confirm or remand the recommendation with specific instructions. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. Within 15 calendar days of a recommendation for dismissal confirmed by the Vice President, the student may appeal to the President. The decision of the President is final.

## **Academic Dishonesty**

The academic development of students and the overall integrity of the institution are primary responsibilities of WVU. Academic dishonesty is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

### **Responsibilities**

Students should act to prevent opportunities for academic dishonesty to occur, and in such a manner to discourage any type of academic dishonesty.

Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and public safety officers, shall promptly report each known case of academic dishonesty to the appropriate supervisor, department chairperson, or dean of the college or school concerned.

### **Academic Dishonesty Defined**

West Virginia University expects that every member of its academic community shares the historic and traditional commitment to honesty, integrity, and the search for truth. Academic dishonesty is defined to include but is not limited to any of the following:

1. Plagiarism: To take and pass off as one's own the ideas, writings, artistic products, etc. of someone else; for example, submitting, without appropriate acknowledgement, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part, from the work of others, whether such source is published, including (but not limited to) another individual's academic composition, compilation, or other product, or commercially prepared paper.

2. Cheating and dishonest practices in connection with examinations, papers, and projects, including but not limited to:

- a. Obtaining help from another student during examinations.
- b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his/her own.

- c. The unauthorized use of notes, books, or other sources of information during examinations.
- d. Obtaining without authorization an examination or any part thereof.
- 3. Forgery, misrepresentation or fraud:
  - a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.
  - b. Use of University documents or instruments of identification with intent to defraud.
  - c. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.
  - d. Knowingly presenting false data or intentionally misrepresenting one's records for personal gain.
  - e. Knowingly furnishing the results of research projects or experiments.
  - f. Knowingly furnishing false statements in any University academic proceeding.

### **Procedure for Handling Academic Dishonesty Cases**

Academic dishonesty includes plagiarism; cheating and dishonest practices in connection with examinations, papers, and projects; and forgery, misrepresentation, and fraud. Some cases of forgery, misrepresentation, or fraud which occur outside the context of courses or academic requirements may be referred directly to the University Committee on Student Rights and Responsibilities by any member of the University community. In such cases, the University Committee on Student Rights and Responsibilities will arrange a hearing following the procedure outlined in Step 3 within 15 calendar days of receipt of the charges.

Step 1. If a student is charged with academic dishonesty, the instructor will contact the student in person and/or notify the student in writing of the specifics of the charge within 15 calendar days of the discovery of the offense. The student must respond within 5 calendar days of the receipt of the notification. If the instructor determines the student is guilty, the maximum penalties the instructor may administer are exclusion from the course, a lower grade, and/or an unforgiveable F (not eligible for D/F repeat policy) in the course. The instructor and/or the department chairperson also may recommend to the dean of the college in which the course is offered that additional penalties be imposed on the student. At the discretion of the faculty member or department chairperson, in cases where there is written admission of guilt by the student, the case may be satisfactorily resolved at the departmental level. Whenever a penalty is administered, the facts of the case shall be reported in writing to the dean of the college or school and a copy forwarded to the Office of Judicial Programs for the permanent records. In cases wherein academic dishonesty occurs in a college or school other than that in which the student is enrolled, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.

Step 2. If the student denies guilt, if the student believes the penalty imposed in Step 1 is unjust, or if the instructor and/or department chairperson determines the penalties available at Step 1 are insufficient for a specific act, the dean of the college or school in which the course is offered shall be notified

in writing of the specifics of the case. The dean shall then implement the following steps within 15 calendar days of receipt of notification:

1. Formal notification to the faculty member that the student is appealing the penalties imposed in Step 1, or formal notification to the student and faculty member of the charges and nature of evidence which, if proved, would justify additional action.
2. Opportunity for the student, faculty, and witnesses to respond or present evidence in writing to the charges.
3. Review by the dean of the facts and evidence presented, and a determination of the penalty or action, if any, to be applied.

Step 3. If the student wishes to appeal the decision of the dean, the appeal must reach the University Committee on Student Rights and Responsibilities within 30 calendar days of the student's receipt of the dean's decision. The University Committee on Student Rights and Responsibilities will arrange a hearing within 15 calendar days using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.
2. The student may be advised by a person of his/her choice from within the institution; likewise, the academic officer recommending the additional action may have an adviser from within the institution. Such advisers may consult with, but may not speak on behalf of their advisees, or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of those involved upon written request. The University Committee on Student Rights and Responsibilities will reach a decision within 7 days of the hearing. If the University Committee on Student Rights and Responsibilities finds the student guilty, it will determine the penalty it deems appropriate under the circumstances and inform all parties involved. The penalty imposed cannot be more severe than the penalty imposed by the dean.

Step 4. Only sanctions of suspension or dismissal invoked or upheld by the University Committee on Student Rights and Responsibilities may be appealed to the President or his/her designee. Such appeals must reach the President's Office within 30 calendar days after receipt of written notice of the decision of the University Committee on Student Rights and Responsibilities. The decision of the President or the President's designee is final.

# Fees and Expenses

## Fee Regulations

All West Virginia University fees are subject to change.

All fees are due and payable to the Controller on the days of registration. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair.

All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University.

No student will be permitted to register at the University after the eighth day of a semester or the fourth calendar day of the summer sessions or a single summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$20.00.

Registering students pay the fees shown in the fee charts, plus special fees and deposits as required.

No degree is conferred upon any candidate and no transcripts are issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

It is the policy of West Virginia University to place on restriction students who have outstanding debts to a unit or units of the University. The restriction may include, but is not limited to, the withholding of a student's registration, a student's diploma, or a student's transcript.

## Financial Aid

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools, from the College Scholarship Service, or the WVU Financial Aid Office. Forms are dated for the appropriate academic year.

*Your Guide to Financial Aid—West Virginia University* is available at the WVU Financial Aid Offices, Mountainlair, Downtown Campus, and 104 Health Sciences Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus courses are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay a \$40.00 course fee for each off-campus course taken.

# Semester Fees in Colleges and Schools

(Subject to Change Without Notice.)

## FULL-TIME<sup>1</sup>

### Undergraduate<sup>a/f</sup>

Fee	Tuition	Registration	Higher Education Resources	Institutional Activity	Mountainlair Construction	Faculty Improvement	TOTAL
Resident	\$165.00	\$ 50.00	\$ 290.00	\$195.00 <sup>c</sup>	\$40.00	\$ 35.00 <sup>d</sup>	\$ 775.00
Nonresident	535.00	250.00	815.00	195.00 <sup>c</sup>	40.00	105.00 <sup>d</sup>	1,940.00

### Graduate<sup>b/f</sup>

Resident	\$195.00	\$ 50.00	\$ 305.00 <sup>c</sup>	\$195.00 <sup>c</sup>	\$40.00	\$35.00 <sup>d</sup>	\$ 820.00
Nonresident	635.00	250.00	815.00 <sup>c</sup>	195.00 <sup>c</sup>	40.00	105.00 <sup>d</sup>	2,040.00

### Dentistry<sup>f</sup>

Resident	\$335.00	\$ 50.00	\$ 700.00 <sup>d</sup>	\$195.00 <sup>c</sup>	\$40.00	\$ 35.00 <sup>d</sup>	\$1,355.00
Nonresident	835.00	250.00	1,540.00 <sup>d</sup>	195.00 <sup>c</sup>	40.00	105.00 <sup>d</sup>	2,965.00

### Medicine<sup>f/h</sup>

Resident	\$300.00	\$ 50.00	\$ 535.00 <sup>d</sup>	\$195.00 <sup>c</sup>	\$40.00	\$ 35.00 <sup>d</sup>	\$2,055.00
Nonresident	800.00	250.00	1,220.00 <sup>d</sup>	195.00 <sup>c</sup>	40.00	105.00 <sup>d</sup>	3,810.00

<sup>1</sup>Undergraduate students enrolled for 12 or more credit hours pay maximum charges as indicated. Students enrolled for less than 12 credit hours pay a prorated charge calculated in direct proportion to the number of credit hours taken.

<sup>b</sup>Graduate students enrolled for 9 or more credit hours pay maximum charges as indicated. Students enrolled for less than 9 credit hours pay a prorated charge calculated in direct proportion to the number of credit hours taken.

"Graduate," for fee purposes, includes all graduate studies programs.

<sup>a</sup>Paid by Law and Graduate students only.

<sup>d</sup>Dental and Medical students pay appropriate laboratory and microscope fees.

<sup>f</sup>Includes Athletics Fee, \$40.00; Student Affairs Fee, \$26.00; Daily Athenaeum Fee, \$3.50; Health, Counseling, and Program Services Fee, \$78.00; Transportation Fee, \$45.00; Radio Station Fee, \$2.50.

<sup>h</sup>All part-time students enrolled for 7 or more credit hours must pay the Institutional Activity Fee and the Mountainlair Construction Fee.

<sup>g</sup>Faculty Improvement Fee will be charged to all students and will be prorated for part-time students.

<sup>h</sup>Includes \$900.00 Resident Medical Education Fee; \$1,200.00 Nonresident Medical Education Fee.

## PART-TIME<sup>2</sup> & SUMMER

Tuition per semester hour	Resident	Nonresident
Undergraduate Students .....	\$ 45.00	\$142.00
Graduate/Law Students .....	65.00	200.00
Dentistry Students .....	124.00	303.00
Medicine Students .....	102.00	263.00
Faculty Improvement Fee .....	Prorated <sup>d</sup>	Prorated <sup>d</sup>

The minimum rate for noncredit courses is that charged for 1 semester hour of credit.

<sup>1</sup>A full-time graduate student is one who is registered for 9 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work altogether during the summer for enrollment verification purposes.

A full-time undergraduate student is one who is registered for 12 or more semester hours work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session.

<sup>2</sup>For fee assessment purposes, a part-time graduate student is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during one 6-week summer session.

A part-time undergraduate student is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

# Estimated Expenses For Health Sciences Center Programs (Subject to Change)

Tuition and registration are the same for both semesters. Some expenses, such as instruments and books, will be different for the Second Semester.

School or Division	Tuition and Registration Fees (Totals from page 36)		Instruments	Lab Coats, Uniforms, etc.	Books	Total	
	Resident	Nonresident				Resident	Nonresident
<b>Dental Hygiene</b> Freshman Sophomore Junior Senior	\$ 775.00	\$1,940.00	\$ 130.00	\$ 17.00	\$200.00	\$1,122.00	\$2,287.00
	775.00	1,940.00	900.00	200.00	200.00	2,075.00	3,240.00
	775.00	1,940.00	275.00	120.00	230.00	1,400.00	2,565.00
	775.00	1,940.00	50.00	100.00	75.00	1,000.00	2,165.00
<b>Dentistry</b> First Year Second Year Third Year Fourth Year	1,355.00	2,965.00	2,640.00	88.00	600.00	4,683.00	6,293.00
	1,355.00	2,965.00	501.00	110.00	167.00	2,133.00	3,743.00
	1,355.00	2,965.00	—	—	70.00	1,425.00	3,035.00
	1,355.00	2,965.00	—	—	—	1,355.00	2,965.00
<b>Medical Technology</b> Junior Summer Senior	775.00	1,940.00	95.00	85.00	400.00	1,355.00	2,520.00
	180.00	457.00	—	250.00	250.00	680.00	957.00
	775.00	1,940.00	—	195.00	—	970.00	2,135.00
<b>Medicine</b> First Year Second Year Third Year Fourth Year	2,055.00	3,810.00	—	50.00	305.00	2,410.00	4,165.00
	2,055.00	3,810.00	525.00	50.00	260.00	2,890.00	4,645.00
	2,055.00	3,810.00	—	30.00	225.00	2,310.00	4,065.00
	2,055.00	3,810.00	—	30.00	150.00	2,235.00	3,990.00
<b>Nursing</b> Sophomore Summer Junior Senior	775.00	1,940.00	40.00	130.00	400.00	1,345.00	2,510.00
	307.00	841.00	—	—	60.00	367.00	901.00
	775.00	1,940.00	—	—	200.00	975.00	2,140.00
	775.00	1,940.00	—	—	200.00	975.00	2,140.00
<b>Pharmacy</b> Third Year Fourth Year Summer Fifth Year	900.00	2,190.00	—	30.00	370.00	1,305.00	2,590.00
	900.00	2,190.00	—	—	180.00	1,125.00	2,270.00
	448.00	\$1,222.00	—	—	—	385.00	1,097.00
	900.00	\$2,190.00	—	30.00	35.00	1,010.00	2,155.00
<b>Physical Therapy</b> Junior Senior Summer	775.00	1,940.00	90.00	90.00	335.00	1,290.00	2,455.00
	775.00	1,940.00	—	70.00	370.00	1,215.00	2,380.00
	307.00	841.00	—	—	—	307.00	841.00

## Special Fees

Application for Undergraduate Admission	
(Resident) .....	\$10.00
(Nonresident) .....	20.00
Application for Admission (Dentistry and Medicine) .....	30.00
Application for Admission (College of Law or Graduate Studies) ...	25.00
Certificate of Advanced Study in Education .....	2.00
Diploma Replacement .....	20.00
Examination for Advanced Standing .....	35.00
Examination for Entrance Credit, per unit .....	1.00
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation .....	20.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Late Registration (nonrefundable) .....	20.00
(Not charged to students who complete registration during the regular registration days set forth in the University Calendar.)	
Non-Enrolled Graduate Student Evaluation Fee .....	50.00
(For graduate students not otherwise enrolled at time of final exam.)	
Professional Engineering Degree (includes \$20.00 Graduation Fee) ...	35.00
Program Reactivation Fee (Graduate Students) .....	20.00
Reinstatement of Student Dropped from the Rolls .....	10.00
Student Identification Card Replacement .....	10.00
Student's Record Fee .....	3.00
(One transcript of a student's record is furnished by the Office of Admissions and Records without charge. This fee is charged for furnishing an additional transcript. Priority transcript available at the rate of \$5.00.)	

## Laboratory Fees

Consult specific departmental sections of this catalog concerning nonrefundable deposits and microscope rental fee.

## Service Charge on Returned Checks

A service charge of \$10.00 is collected on each check returned unpaid by the bank upon which it was drawn.

If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid. Registration is cancelled if the check is not redeemed within three days from date of written notice. In such a case the student may be reinstated when he/she redeems the check, pays the \$10.00 service charge, the \$10.00 reinstatement fee, and the \$20.00 late payment fee.

## Part-Time and Summer Costs

Tuition, per semester hour	Resident	Nonresident
Undergraduate Students .....	\$ 39.00	\$128.00
Daily Athenaeum Fee* .....	1.00	1.00
Radio Station Fee* .....	1.00	1.00
Health, Counseling, and Program Services Fee .....	29.00	29.00
Mountainlair Construction Fee, per 6-week summer session or any portion thereof* .....	15.00	15.00
Student Affairs Fee .....	10.00	10.00
Transportation Fee .....	17.00	17.00

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

### Non-Sufficient Funds Check Policy

Payments of tuition, fees, and other charges by check are subject to WVU's Non-Sufficient Funds Check Policy. A copy of the policy is available in the Bursar's Office.

### Refund of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Controller evidence of eligibility for a refund during the semester.

To withdraw officially, a student must apply to the Division of Student Affairs for permission. Semester fees will be returned in accordance with the following schedule:

Academic Year (Semester)	Refund
During the first and second weeks .....	90%
During the third and fourth weeks .....	70%
During the fifth and sixth weeks .....	50%
Beginning with the seventh week .....	No Refund

### Summer Sessions and Non-Traditional Periods

Refunds for summer sessions and non-traditional periods are established based upon the refund rate for the academic year. For specific information concerning summer session refunds, see the appropriate *Summer Schedule of Courses*. Should the percentage calculation identify a partial day, the entire day will be included in the higher refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit if the call comes before the end of the first three-fourths of the semester, and that full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

## **Cost of an Academic Year's Work**

The Student Financial Aid Office estimates that the total cost of attending WVU for a nine-month academic year is \$6,000 for single West Virginia residents living on or off-campus, \$3,500 for those living at home, \$8,000 for single nonresidents living on or off-campus, and \$5,500 for those living at home.

These typical estimated student budgets include tuition and fees, books and supplies, room, board, transportation, and personal expenses to provide a modest but adequate life-style.

## **Identification Card**

An identification card is issued to each full-time student when fees are paid in full. It admits the owner to certain University athletic events, various activities of student administration, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

## **Policy Regarding Residency Classification Of Students for Admission and Fee Purposes**

### **Section 1. Classification for Admission and Fee Purposes**

1.1 Students enrolling in a West Virginia public institution of higher education shall be assigned a residency status for admission, tuition, and fee purposes by the institutional officer designated by the President. In determining residency classification, the issue is essentially one of domicile. In general, the domicile of a person is that person's true, fixed, permanent home and place of habitation. The decision shall be based upon information furnished by the student and all other relevant information. The designated officer is authorized to require such written documents, affidavits, verifications, or other evidence as is deemed necessary to establish the domicile of a student. The burden of establishing domicile for admission, tuition, and fee purposes is upon the student.

1.2 If there is a question as to domicile, the matter must be brought to the attention of the designated officer at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning domicile shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

1.3 The previous determination of a student's domiciliary status by one institution is not conclusive or binding when subsequently considered by another institution; however, assuming no change of facts, the prior judgment should be given strong consideration in the interest of consistency. Out-of-state students being assessed resident tuition and fees as a result of a reciprocity agreement may not transfer said reciprocity status to another public institution in West Virginia.

### **Section 2. Residence Determined by Domicile**

2.1 Domicile within the State means adoption of the State as the fixed permanent home and involves personal presence within the State with no intent on the part of the applicant or, in the case of a dependent student, the applicant's parent(s) to return to another state or country. Residing with

relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain domicile in this State for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least twelve months of continued presence within the State prior to the date of registration, provided that such twelve months' presence is not primarily for the purpose of attendance at any institution of higher education in West Virginia. Establishment of West Virginia domicile with less than twelve months' presence prior to the date of registration must be supported by evidence of positive and unequivocal action. In determining domicile, institutional officials should give consideration to such factors as the ownership or lease of a permanently occupied home in West Virginia, full-time employment within the State, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, possessing a valid West Virginia driver's license, and marriage to a person already domiciled in West Virginia. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors militating against the establishment of West Virginia domicile might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents' health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the State when school is not in session.

### **Section 3. Dependency Status**

3.1 A dependent student is one who is listed as a dependent on the federal or state income tax return of his/her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same domicile as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the domicile of the parent with whom he/she lives or to whom he/she has been assigned by court order. However, a dependent student who enrolls and is properly classified as an in-state student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

3.2 A nonresident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain domicile in this State for admission or fee payment purposes.

### **Section 4. Change of Residence**

4.1 A person who has been classified as an out-of-state student and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he/she has established domicile in West Virginia with the intention of making the permanent home in this State. The intent to remain indefinitely in West Virginia is evidence not only by a person's statements, but also by that person's actions. In making a determination regarding a request for change in residency status, the designated institutional officer shall consider those actions referenced in Section 2 above. The change in classification, if deemed to be warranted, shall be effective for the academic term or semester next following the date of the application for reclassification.

## **Section 5. Military**

5.1 An individual who is on full-time active military service in another state or foreign country or an employee of the federal government shall be classified as an in-state student for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

5.2 Persons assigned to full-time active military service in West Virginia and residing in the State shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

## **Section 6. Aliens**

6.1 An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 2 may be eligible for in-state residency classification, provided that person is in the State for purposes other than to attempt to qualify for residency status as a student. Political refugees admitted into the United States for an indefinite period of time and without restriction on the maintenance of a foreign domicile may be eligible for an in-state classification as defined in Section 2. Any person holding a student or other temporary visa cannot be classified as an in-state student.

## **Section 7. Former Domicile**

7.1 A person who was formerly domiciled in the state of West Virginia and who would have been eligible for an in-state residency classification at the time of his/her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one year period of time and satisfies the conditions of Section 2 regarding proof of domicile and intent to remain permanently in West Virginia.

## **Section 8. Appeal Process**

8.1 The decisions of the designated institutional officer charged with the determination of residency classification may be appealed to the President of the institution. The President may establish such committees and procedures as are determined to be appropriate for the processing of appeals. The decision of the President of the institution may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board.

# Graduate Programs in Basic Sciences

Fred R. Butcher, Chairperson of the Health Sciences Graduate Council

## Degrees Offered

Doctor of Philosophy and Master of Science in:

- Anatomy
- Biochemistry (Medical)
- Microbiology (Medical)
- Pharmacology and Toxicology
- Physiology

Doctor of Philosophy in Biomedical Sciences, awarded in conjunction with Marshall University

## Nature of Program

Graduate degrees are offered by the School of Dentistry, School of Nursing, School of Pharmacy and the Departments of Anatomy, Biochemistry, Microbiology and Immunology, Pharmacology and Toxicology, Physiology, and Pathology (Medical Technology) in the School of Medicine. Brief guidelines and descriptions of these programs are found in this catalog. For more detailed presentation of graduate programs, as well as the policies and rules governing graduate education, the graduate catalog should be consulted.

## Health Sciences Center Graduate Council

The Health Sciences Center Graduate Council advises the Vice President for Health Sciences. In this role the Council monitors and administers the graduate studies policies of the schools located at the Health Sciences Center. The membership of the Council includes: Fred R. Butcher (Chairperson), Charles R. Craig and Irvin S. Snyder, School of Medicine; James Overberger, School of Dentistry; Mary Jane Smith, School of Nursing; Peter Gwilt, School of Pharmacy, and Darlene Taylor, secretary.

## Application and Admission

Prospective graduate students are urged to initiate application for admission as early as possible. The first step of a student interested in a degree program should be to ask for information from the department, division, school, or college offering the program desired; the reply to such an inquiry will include instructions for applying to the particular program.

In all cases, application must be made for admission to graduate study on standard forms provided by the WVU Office of Admissions and Records. The completed form is to be returned to the Office of Admissions and Records, and must be accompanied by payment of a nonrefundable special service fee of \$25.00. Applicants must at the same time request the registrar or records office of the college of their baccalaureate degree to send an official transcript directly to the Office of Admissions and Records. If other institutions have been attended in the course of undergraduate or graduate study, transcripts should be requested from them as well. No one is admitted to graduate study who does not hold a baccalaureate degree.

If the applicant meets the minimum admission requirements of WVU, a copy of the application is forwarded to the faculty of the program of interest.

Any graduate degree program is permitted to set admission requirements which go beyond the minimum admission standards of the University. No one can pursue an advanced degree at WVU unless admitted to the appropriate degree program.

## **Reapplication**

When a student graduates or completes the program for which he/she applied, the student must reapply and be readmitted before taking further course work at WVU. This policy assures that the University is informed of the student's objectives and that he/she is assigned an appropriate adviser. Students will be assessed the application fee for each new application.

When eight years have passed since initial course work, a student must reapply. The application fee will be assessed.

## **Classification of Graduate Students**

**1. Regular.** A regular graduate student is a degree-seeking student who meets all the criteria for regular admission to a program of his/her choice. The student must possess a baccalaureate degree from a college or university, must have at least a grade-point average of 2.5 (on a 4.0 scale), have met all the criteria established by the degree program, and be under no requirements to make up deficiencies.

**2. Provisional.** A student may be admitted as provisional by any unit when the student possesses a baccalaureate degree but clearly does not meet the criteria for regular admission. The student may have incomplete credentials, deficiencies to make up, or may have an undergraduate scholastic record which shows promise, but less than the 2.5 grade-point average required for regular admission.

**3. Non-Degree.** A non-degree student is a student not admitted to a program. Admission as a non-degree student does not guarantee admission to any course or program. To be admitted as a non-degree student, a student must only present evidence of a baccalaureate degree, but the student must obtain a 2.25 grade-point average on the first 12 credit hours of course work and maintain this average as long as enrolled. To be eligible to enter a degree program, the student must maintain a minimum of a 2.75 grade-point average on all course work taken since admission as a graduate student.

## **Reclassification**

### **1. Provisional to Regular:**

a. The provisions of a student's provisional status must be specified in the letter of admission.

b. To be reclassified as a regular student, a student must meet the provisions stated in the letter of admission and achieve a minimum grade-point average of 2.75 on all course work taken during the provisional period. Individual degree programs may set higher grade-point average requirements.

c. No later than the completion of the 18th credit hour, a unit must review the student's record and make a final decision on the student's admission. A student who has met the provisions of admission and achieved the required grade-point average will be reclassified as a regular student. A student who fails to meet the provisions of admission or who fails to achieve the required grade-point average will be suspended, but may be reinstated in order to transfer to another program or to non-degree status. The academic unit must notify the student and the Office of Admissions and Records of its decision.

d. Upon notification by the appropriate academic unit, the Office of Admissions and Records will prohibit the registration of all provisional graduate students who have reached the maximum of 18 credit hours. Registration will not be permitted until the student is reclassified as a regular student, an exception is granted by an academic dean, or the student is transferred.

e. A student may be admitted as a provisional graduate student more than one time, but not to the same graduate program.

f. All credit hours taken since admission as a provisional graduate student or to be applied to a degree count in the 18 credit-hour limit, i.e., undergraduate or graduate credit, P/F, S/U, graded courses, credit by senior petition, and transfer credit.

### **2. Regular or Provisional to Non-Degree:**

a. Regular and provisional students may become non-degree students by choice. This includes students who fail to meet admission or academic standards or who withdraw voluntarily.

b. To change a student to non-degree status, the adviser must process a Graduate Studies Transfer/Status form through the Health Sciences Center Graduate Programs Office.

### **3. Non-Degree to Regular or Provisional:**

a. Non-degree students who later wish to become degree candidates must transfer and present all the credentials required by the degree program. This requires the processing of a Graduate Studies Transfer/Status form by the student's adviser through the Health Sciences Center Graduate Programs Office.

b. For admission to a degree program, a non-degree student must have achieved a minimum grade-point average of 2.75 on all course work taken since admission as a graduate student.

## **Graduate Record and Other Examinations**

Many programs at WVU require Graduate Record Examination (GRE) scores from all applicants, but in no program are they the sole criterion for admission. Some programs require both the general aptitude and the appropriate advanced test before considering an applicant for admission. All departments in the School of Medicine require that a student take the GRE test. The School of Pharmacy also requires a student have the GRE.

## **Admission of International Students**

International students wishing to enroll for graduate work at WVU must comply with the stated academic requirements for admission and with certain additional academic and nonacademic requirements as follows:

### **Early Inquiry and Application**

International applicants should forward a letter of inquiry one year before the intended time of beginning study in the United States.

### **English Proficiency**

All international applicants, the language of whose family and schooling was other than English, must present a composite score of at least 550 on the "Test of English As a Foreign Language" (TOEFL).

## **Credentials**

See the *WVU Graduate Catalog*.

## **Intrauniversity Transfers**

To transfer from one school/department to another, a student may initiate a transfer request by contacting the Health Sciences Center Graduate Programs Office or his/her adviser. The adviser must contact the Health Sciences Center Graduate Programs Office which will complete transfer.

## **Credit Limitations**

### **General**

Credit toward a graduate degree may be obtained only for courses listed in the graduate catalog, and numbered 200-499, in which the grade earned is A, B, C, or S. No course in which the grade earned is D, P, F, or U can be counted toward a graduate degree.

### **Employed Graduate Students**

Graduate students will be required by their advisers to limit their credit loads in proportion to the outside service rendered and the time available for graduate study. In general, persons in full-time service to the University, or other employer, will be advised to enroll for no more than 6 hours of work in any one semester and those in half-time service for no more than 12 hours. Maximum credit loads may be less for employed graduate students in some academic colleges, schools, and departments.

### **Non-Degree Graduate Students**

A non-degree graduate student may accumulate unlimited graduate credit hours, but if the student is later admitted to a degree program, the faculty of that program will decide whether or not any credit earned as a non-degree student may be applied to the degree. Under no circumstances may a non-degree student apply more than 12 hours of credit toward a degree.

### **Transfer Credit**

To apply graduate-level credits from other institutions toward a master's degree at WVU, students must get permission from the individual schools or colleges. The standardized permission form, signed by a unit chairperson or designate, must be submitted to the Office of Admissions and Records with an official transcript from the other institution. Only credit earned at institutions accredited at the graduate level may be transferred.

Graduate courses taken elsewhere will not be approved for transfer credit unless written approval was secured before enrolling in them. At the time the written approval is given, a copy of approval must be sent to the Health Sciences Center Graduate Programs Office.

A maximum of 12 semester hours from other institutions will be accepted for credit at WVU in master's degree programs requiring 30 to 41 semester hours. Eighteen (18) semester hours will be accepted for master's degree programs requiring 42 or more semester hours. Individual graduate programs may accept fewer credit hours.

Completed permission forms are to be submitted to the Health Sciences Center Graduate Programs Office for approval.

## **Time Limits**

### **Master's Degree**

All requirements for a master's degree must be completed within 8 years preceding the student's graduation.

### **Doctorate**

The doctorate is a research or performance degree and does not depend on the accumulation of credit hours. The three requirements of the degree are admission to candidacy, residency, and completion and defense of the dissertation. The degree signifies that the holder has the competence to function independently at the highest level of endeavor in the chosen profession. Hence, the number of years involved in attaining or retaining competency cannot be readily specified. Rather, it is important that the doctoral student's competency be assessed and verified in a reasonable period of time prior to conferral of the degree.

The qualifying examination is the method of assessing whether the student has attained sufficient knowledge of the discipline and supporting fields in order to undertake independent research or practice. It is expected that the examination will occur after all course work has been completed and language or other requirements satisfied, and it consists of a series of examinations covering all areas specified in the plan of study. After the component parts of the qualifying examination have been successfully passed, the student is admitted to candidacy for the degree. It is sometimes called the candidacy examination because no one can be called a doctoral candidate until this first requirement for the degree has been met.

Because the qualifying examination attests to the academic competence of the student who is about to become an independent researcher or practitioner, the examination should not precede the degree by too long a period of time. Consequently, doctoral candidates are allowed no more than 5 years in which to complete remaining degree requirements. In the event a student fails to complete the doctorate within 5 years after admission to candidacy, an extension of time can be obtained only by repeating the qualifying examination, and meeting any other requirements specified by the student's committee.

## **Contractual Nature of Graduate Study**

The student's rights, privileges, obligations, and responsibilities are contained in the graduate catalog, the plan of study, and, if research is one of the degree program requirements, the prospectus. Although not contracts in the formal legal sense, they are agreements between the University and a student for the accomplishment of planned educational goals.

## **Plan of Study**

Submit within the first academic year (18 hours for a master's and 30 hours for doctorate/after thesis committee for Nursing) to the Health Sciences Center Graduate Programs Office.

The plan of study is subject to approval and is made a part of the student's record. It then becomes a formal agreement between student and program faculty as to the conditions which must be met for completion of the degree requirements. Any subsequent changes in plan of study (or prospectus) can

be made only through mutual agreement, with a memorandum of changes sent to the Health Sciences Center Graduate Programs Office.

## **Records in Health Sciences Center Graduate Programs Office**

The Health Sciences Center Graduate Programs Office maintains all records for monitoring student progress and for certifying students for graduation. Among these records are: (1) plans of study (subject to chairperson of Health Sciences Center Graduate Council's approval); (2) graduate committees (subject to school dean's or designate's approval and approval of the Health Sciences Center Graduate Programs Office); (3) grades; (4) grade modifications, etc.

## **Grading**

Pass/Fail grading is not applicable to the course work for a graduate degree. A graduate student may register for any course (1-499) on a Pass/Fail basis only if the course involved is not included in the student's plan of study and does not count toward a graduate degree. The selection of a course for Pass/Fail grading must be made at registration and may not be changed after the close of the registration period. A student who, having taken a course on a Pass/Fail basis, later decides to include the course as part of a degree program must re-register for the course on a graded (A, B, C, D, or F) basis.

## **Incompletes**

The grade of I is given when the instructor believes the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within one academic year or made a permanent incomplete. Grade modification forms are to be signed by the instructor of the course, and then brought to the Health Sciences Center Graduate Programs Office for processing.

Grade changes other than I to a letter grade must be accompanied by an explanatory memo.

## **Theses and Dissertations**

### **Procedural Rules**

See the *WVU Graduate Catalog*.

## **Dismissal From a Graduate Or a Professional Program**

Dismissal from a graduate or professional program based on program and/or professional performance standards other than cumulative grade-point average:

1. Reasons must be based on catalog and other written documents describing academic and professional performance standards and expectations.

2. Procedural

- Step 1. Counseling by departmental committee or representative as soon as possible after discovery of problem.

- Step 2. Second counseling by departmental committee or representative after opportunity to improve if performance is not changed sufficiently.

Step 3. Formal review of student status by department or program committee to determine:

- a. Student retained or recommended for dismissal.
- b. Counseling or remediation steps required as a condition of retention.
- c. Appeals available if dismissal recommended.

Step 4. A dismissal decision by the dean of the student's school or college may be appealed to the University Conduct/Appeals Committee which will hold a hearing using the following procedures:

- a. The student may be advised by a person of his/her choice to assure due process protection not to affect the outcome of the proceedings. The adviser may consult with the student but shall not speak on behalf of the student or participate directly unless granted specific permission by the University Conduct/Appeals Committee.
- b. The formal rules of evidence do not apply.
- c. The administrative procedure is not adversarial in nature.
- d. Witnesses may be presented and examined under oath.
- e. An accurate record of the procedure is to be kept. The student may request a transcript of the proceedings at the student's expense.
- f. An academic appeals committee has the right to counsel in those proceedings in which the student has retained counsel. Such counsel may not speak on behalf of the institution or otherwise participate directly in the proceedings.

Step 5. A decision for dismissal must be reviewed by the appropriate academic Vice President who may confirm or remand the recommendation with specific instructions.

Step 6. Recommendation for dismissal confirmed by the appropriate academic Vice President may be appealed to the President. The decision of the President is final.

## **Students' Committees**

### **Number of Committee Members**

Doctoral dissertation committees will consist of no fewer than five members, the majority of which will be regular graduate faculty including the chairperson. No more than one person may be a non-member.

Master's committees of programs requiring a thesis will consist of no fewer than three members, the majority of which will be regular graduate faculty including the chairperson. No more than one person may be a non-member.

Master's committees of programs not requiring a thesis will consist of no fewer than three members, one of which must be a regular graduate faculty member. No more than one person may be a non-member, and the non-member cannot chair or advise.

Committee approval must be obtained prior to the second semester for a master's degree and prior to the fourth semester for the doctorate. Committee approval for the nursing program is after the third semester.

### **Committee Approval**

All graduate committees are subject to the approval of the school dean or designate and the Health Sciences Center Graduate Programs Office.

## **Anatomy**

James L. Culberson, Ph.D., Acting Chairperson

The Department of Anatomy offers graduate programs which are committed to training strong, independent researchers and skilled teachers. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. All predoctoral students are encouraged to initiate laboratory research in the early phases of their training. Once their research interests have been defined, the student conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

### **Admission Requirements**

In addition to the admission procedure of the University, the Department of Anatomy requires that each applicant complete a departmental application form obtained from the department. After an application is favorably reviewed, applicants are invited for a personal interview whenever practical.

It is recommended that the following courses be completed before entering the graduate program: algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants desiring consideration for financial aid should complete the application process by March 1.

### **Doctor of Philosophy**

The first year of study usually consists of required course work within the Department of Anatomy. These courses include gross anatomy, micro-anatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken in the Department of Anatomy and has maintained a required 2.75 overall grade-point average.

To be admitted to candidacy for the Ph.D. degree, the student must satisfy the above requirements, pass a written comprehensive preliminary examination, prepare a proposal for a research project to be undertaken for the dissertation, and defend that proposal in an oral examination. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research of publication quality and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

## Master of Science

The master's program in anatomy is offered as a terminal degree primarily for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy and 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work, the student must complete a thesis based on original research and defend the thesis at an oral comprehensive examination.

## Research and Instruction

**Research Areas**—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues, and organs, under normal and experimental conditions with *in vivo* microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

## Anatomy (Anat.)

101. *Principles of Human Anatomy*. (For paramedical students only.) I. 3-4 hr. PR: Biol. 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.
102. *Gross Anatomy*. (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck.
109. *Oral Histology*. (For dental hygiene students.) II. 3 hr. PR: Consent of instructor or chairperson. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.
152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent of instructor or chairperson. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (Same as *Sociology and Anthropology 152*.)
301. *Gross and Developmental Anatomy: Trunk*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum emphasizing clinically-related concepts.
302. *Gross and Developmental Anatomy: Head-Neck*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 3 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the head and neck emphasizing clinically-related concepts.

304. *Gross and Developmental Anatomy: Extremities.* (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Medical student standing or consent of chairperson. Gross anatomical and developmental study of the upper and lower limbs emphasizing clinically-related concepts.
305. *Microanatomy.* (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities.* (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the back, upper extremities, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy.* (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy.* (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system.
309. *Microanatomy and Organology.* (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.
312. *Special Topics in Anatomy.* I, II. 2-4 hr. per sem. PR: Anat. 301 or 306; and Anat. 305 or 309; consent of chairperson. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy.* I, II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
316. *Craniofacial Growth and Maturation.* I. 1 hr. PR: Consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.
318. *Oral Histology and Embryology.* (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.
319. *Advanced Head and Neck Anatomy.* 1 hr. PR: Dental, medical, or graduate student in basic sciences, or consent. Head and neck craniofacial anatomy as it applies to specialties in dental or medical practice.
320. *Electron Microscopy.* (For limited number [12] of graduate, medical and senior undergraduate students.) 4 hr. PR: Consent of instructor. Offered only in Spring Semester of even years. Transmission, scanning and analytical electron microscopy. (See also CC MD 320.)
375. *Neurobiology.* (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology. (See also CC MD 375—Neurobiology.)
401. *Advanced Gross Anatomy.* I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.

402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology*. II. (Alternate Years.) 3 hr. PR: Embryology and cellular physiology or biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. (Odd Numbered Years.) 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairperson. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
490. *Teaching Practicum I and II*. 1-3 hrs. Consent of chairperson. Supervised practice in college teaching of anatomy. Graded as S or U.
491. *Advanced Anatomy*. I, II. 1-6 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Studies Committee.)

## Biochemistry

Diana Beattie, Ph.D., Chairperson  
Kent Vrana, Graduate Coordinator

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry.

## Admission Requirements

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed courses in qualitative-quantitative chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission into the program.

Application is made by submission of the following items to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's present abilities and potential; (c) official transcript of the applicant's college grades; and (d) official copy of Graduate Record Examination scores. Owing to the sequence of courses, entrance in the fall is preferred, but exceptions may be made as necessary. Application material and program details may be obtained by writing: The Graduate Coordinator, Department of Biochemistry, School of Medicine, West Virginia

University, Morgantown, WV 26506. The deadline for receipt of applications and supporting documents by the department is June 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1.

### **Doctor of Philosophy**

To assure that all students become familiar with the basic principles of biochemistry, the first year of the Doctor of Philosophy (Ph.D.) program is devoted primarily to course work. In addition to formal courses during the first semester, students participate in a laboratory program which involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice.

Upon successful completion of the first year, students will choose a dissertation research adviser, at which time emphasis will be placed on research. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, and a few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate, thus students learn to effectively organize and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the research results to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

### **Master of Science**

The Department of Biochemistry offers the thesis master's degree. This program involves completion of a master's research project in addition to formal course work. Two to three years are generally required to complete the M.S. program.

### **Research and Instruction**

*Research Areas*—Hormonal regulation of metabolism. Regulation of gene expression. Structure and function of nucleic acids. Chemistry of enzymes and serum proteins. Structure of connective tissue. Nutritional oncology. Secretory mechanisms. Biogenesis of membranes.

### **Biochemistry (Bioch.)**

139. *Introduction to Biochemistry*. I. 4-5 hr. PR: General chemistry. (For medical technology and pharmacy students; others by consent.) Lecture and conference, 4 hr.; Laboratory/demonstration, 1 hr.
192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.
231. *General Biochemistry*. I. 7 hr. PR: General chemistry, organic chemistry. (For medical students; others by consent.) Consists of seven main lectures, one clinical correlation lecture and one problem session per week.
239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)

305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry, and consent. (For dental and graduate students.) Lecture, conference, and demonstration.
- 310/312. *General Biochemistry*. (Offered in conjunction with the Department of Agricultural Biochemistry.) I, II. 4 hr. per sem. PR: General chemistry, organic chemistry. (For graduate students in basic sciences programs.)
399. *Special Topics*. I, II. 1-2 hr. PR: Consent. Journal Club, Teaching, and Laboratory Rotations.
490. *Teaching Practicum I and II*. 1-3 hrs. Consent of chairperson. Supervised practice in college teaching of biochemistry. Graded as S or U.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Physical techniques in biochemistry; nucleic acids; enzymology and protein chemistry; metabolic regulation (each topic—one semester; offered alternate years). Designed primarily to provide a background for students who will do research in biochemistry and molecular biology. (*Nucleic Acids—Fall, 1989; Cell Biology—Spring, 1990; Metabolic Regulation—Fall, 1990; Enzymology—Spring, 1991.*)
496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr. PR: Consent.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

### Conjoined Basic Sciences Courses (CC MD)

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. (For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
350. *Radiation Safety and Radionuclide Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; NRC and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. II. 2-4 hr. PR: Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (*Also listed as Gen. 370, Med. 370, Pedia. 370.*)
375. *Neurobiology*. (For medical and a limited number of regular, full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (*Graded as S or U.*) The fourth year is selective and offers a wide range of opportunities. The student works with the adviser to select the individual program. This program must also be approved by the fourth-year curriculum coordinator in the Office of Student Affairs. The year is composed of eleven 4-week blocks, sixteen of which must be spent in intramural programs on the Morgantown campus or at the Charleston Division—WVU Medical Center. A Catalog is available that lists the specific guidelines for the fourth-year curriculum as well as approved intramural and in-state extramural selectives.

## **Microbiology and Immunology**

Irvin S. Snyder, Chairperson

Degrees Offered: M.S., Ph.D.

The Department of Microbiology and Immunology offers programs of study leading to the degree Doctor of Philosophy (Ph.D.) or Master of Science (M.S.) in Microbiology and Immunology. Students with an undergraduate degree can apply to either the Ph.D. or M.S. program. The major purpose of graduate education in the department is research training. The basic philosophy of the department is that the students have a strong foundation in basic concepts of microbiology and immunology, and flexibility in choosing advanced course work in their specific areas of interest. A major emphasis of the graduate program is extensive laboratory research training in microbiology and immunology. Each student will complete an original, in depth research investigation. The overall aim of the program is to produce students capable of designing and doing independent research and teaching.

### **Admission Requirements**

Applicants to either the Ph.D. or M.S. graduate programs in microbiology and immunology must have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores—both aptitude and advanced to the Chairperson, Admissions and Scholarship Committee, Department of Microbiology and Immunology. In addition, transcripts and an official application for admissions must be sent directly to the WVU Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009. Applicants for admission to a degree program should have a grade-point average of 3.0 or better, and a score of 600 or above on each of the GRE examinations. International students must have a TOEFL score of 550. Early application is encouraged. Applicants desiring financial aid should complete their application before January 1. All applications must be completed by June for fall admission. Applications for admission in the spring semester must be completed by November 1.

### **Program Requirements**

#### **Master of Science (M.S.)**

Every student must take the following courses or demonstrate proficiency by examination in each of the following areas: Microbiology (M. Bio.) 301 (Medical Microbiology and Immunology), M. Bio. 310 (Structure and Activities of Microorganisms), and a 3 hr. course in immunology, M. Bio. 391 (Advanced Topics [Laboratory Rotation]). Two semesters of biochemistry are required. The remainder of the course work is selected by the student and the advisory committee from the following courses: M. Bio. 327, 399, or from any of the Microbiology and Immunology Advanced Study courses (M. Bio. 491). Enrollment in M. Bio. 496 (Seminar) is required each semester that the student is in residence. All full-time students in the Department of Microbiology and Immunology are required to participate in teaching at least one semester a year.

The Master of Science program requires 30 hours course work of which at least 20 hours must be in microbiology and immunology. Six hours must be in research (M. Bio. 397). A grade-point average of at least 3.0 must be

maintained. A thesis representing original research and a final oral examination are required. In general, two years are needed to complete the M.S. program.

### **Doctor of Philosophy (Ph.D.)**

Students with either a bachelor's or master's degree can apply to the Ph.D. program. The doctoral candidate with a bachelor's degree will complete the basic course requirements expected of an M.S. candidate. The doctoral candidate with an M.S. degree from another department must have had course work or demonstrate knowledge in microbiology and immunology and biochemistry equivalent to that of an M.S. student in the department. In addition, the doctoral student will take additional appropriate course work as determined by the student's graduate research advisory committee. A minimum of 9 hours in Microbiology 491 courses or selected advanced courses from other departments is required. Where appropriate, course work in related subjects such as computer science, cell biology, biochemistry, physical chemistry, and statistics will be required. M. Bio. 496 (Seminar) is a required course each semester that the student is in residence. The student will maintain a grade-point average of 3.0. The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation and the passing of a written qualifying and final oral examination. The qualifying examination is given at the end of the first year of study. The final oral examination is given after completion of research and an acceptable dissertation. All full-time students are required to participate in teaching at least one semester a year. Three years are usually needed to complete the Ph.D. program.

### **Other**

The Department of Microbiology and Immunology has informal journal clubs in immunology and in microbiology. These are designed to help the students develop skills in reading, interpreting and discussing current research articles. All students are expected to participate in one or more.

For application materials, a description of faculty research interests, guidelines for graduate study in the Department of Microbiology and Immunology, or additional information, write to the Chairperson, Admissions and Scholarship Committee, Department of Microbiology and Immunology, Health Sciences Center, West Virginia University, Morgantown, WV 26506.

### **Research and Instruction**

*Research Areas*—Pathogenic Bacteriology: mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: nutrition and metabolism of a variety of pathogenic microorganisms; growth and protein synthesis in obligate intracellular bacteria. Genetics: basic studies on the mechanisms of genetics including transfer of genetic information; recombinant DNA studies. Virology: cytomegalovirus molecular genetics; glycoproteins in cytomegalovirus infection, papilloma virus diseases; bacteriophage-host interactions. Parasitology: host-parasite relationships between helminth parasites and insects and vertebrate hosts; endosymbionts in protozoa. Immunology: immunopathology of pulmonary disease; inflammatory response to inhaled organisms; developmental aspects

of immunity; mechanisms of T-cell function. Other programs: detection of environmental pollutants; effect of environmental agents on host resistance.

### **Microbiology (M. Bio.)**

Graduate Faculty: Members Burrell, Charon, Gerencser, Landreth, Lewis, Mengoli, Olenchok, Pore, Sheil, Snyder, Sorenson, Stenberg, Thompson, Yelton, and Young. Associate Member Hall.

- 26. *Microbiology*. (For students in nursing-dental hygiene programs.) I. 4 hr. PR: Chem. 11, 12 or equiv.
- 220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
- 223. *Microbiology*. (For medical technology students; other students with consent.) II. 5 hr. PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
- 224. *Parasitology*. (For medical technology students. Other students with consent.) II. 4 hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
- 301. *Microbiology*. (For medical students and a limited number of graduate students in health sciences, basic science departments.) I. 5-7 hr. PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms and immunology. Emphasis on use of microbiology in solving clinical problems.
- 302. *Microbiology*. (For dental students only.) I. 5 hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
- 310. *Structure and Activities of Microorganisms*. II. 3 hr. PR or Conc: Biochemistry, consent. Molecular biology of *E. coli* and other selected organisms.
- 317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem.
  - A. *Special Problems in Basic Immunology*. I. 2 hr. PR: Consent M. Bio. 310; biochemistry; consent.
  - B. *Special Problems in Microbiology*. I, II, S. VR. PR: Consent.
  - C. *Special Problems in Post Graduate Dental Microbiology*. II. 4 hr. PR: Consent.
- 327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
- 391. *Advanced Topics*.
  - A. *Laboratory Rotation*. I. 3 hr. PR: Consent; For graduate students in Microbiology and Immunology. Assigned study to develop research laboratory techniques. (Graded as S or U.)
  - B. *Immunology*. I, II, S, VR. PR: Consent. Independent study in immunology.
- 397. *Master's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Graduate students in Microbiology and Immunology. Students may enroll more than once. (Graded as S or U.)
- 399. *Special Topics in Microbiology, Cell Biology*. II. 3 hr. PR: Biochemistry; 1 yr. undergraduate biology; consent. Lectures in selected areas of cell biology.
- 490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)

491. *Advanced Study.*

*Pathogenic Bacteriology.* I. 2 hr. PR: M. Bio. 301, 310 or equiv., consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease.

*Clinical Laboratory Bacteriology.* I, II. VR. PR: M. Bio. 301, 310, or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)

*Microbial Genetics.* I. 3 hr. PR: M. Bio. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.

*Microbial Metabolism.* II. 2 hr. PR: M. Bio. 310 or equiv., biochemistry, consent. Physiology, metabolism, and regulation of representative microbial groups.

*Microbial Metabolism Laboratory.* II. 1 hr. PR: Open to departmental graduate students only. Research techniques in metabolic regulation.

*Medical Mycology.* I. 3 hr. PR: Consent. Advanced study of fungi of medical importance, including the pathobiology of mycoses and toxicoses.

*Molecular Virology.* I. 3 hr. PR: M. Bio. 301, 310, or equiv.; consent. Molecular biology of viruses that are important both biologically and medically. Includes a basic introduction to replication and genetics as well as current topics in molecular virology.

*Developmental Immunology.* I. 3 hr. PR: Consent. Examines the development of the lymphoid components of the immune system (B and T lymphocytes) and interactions leading to effective immune responses.

*Cellular and Genetic Basis of the Immune Response.* I. 3 hr. PR: Consent. Emphasis is on contemporary issues in understanding the genetic and cellular elements that impact immune responses.

*Contemporary Topics in Immunology.* II. 3 hr. PR: Consent. Detailed coverage of major issues of contemporary research in immunobiology.

*Systems Immunology.* II. 3 hr. PR: Consent. An integrative, systems approach to immunology stressing how immunologic recognition is translated into biologic consequences. Advanced treatment of different aspects of the efferent arm of immune responses.

496. *Seminar.* I, II. 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)

497. *Ph.D. Research or Dissertation.* I, II, S. 1-15 hr. Students may enroll more than once. (Graded as S or U.)

## Pathology

Nathaniel F. Rodman, M.D., Chairperson

*Research Areas*—Atherosclerosis; thrombosis; platelet aggregation and functions with correlative ultrastructural study, lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electron microscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; histogenesis of neoplasia; biomedical application of laboratory medicine; and applied laboratory studies in microbiology.

## **Pathology (Path.)**

128. *Introduction to Basic Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy, or consent. A study of the basic pathologic processes in man.
129. *Introduction to Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.
328. *Basic Pathology*. (For dental students and graduate students, with consent.) II. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.
338. *Oral Pathology 1*. I, S. 3 hr. PR: Path. 328, or consent. Clinical, radiographic, and microscopic discussion of local and systemic diseases affecting oral and paraoral structures.
350. *Hematology*. 3 hr. (For certain graduate students, with consent of the chairperson.) Includes morphologic description of formed elements of blood including classification of red blood cell, white blood cell, and platelet disorders. Case material and slide reviews are integral parts of the course work.
351. *Pathology and Laboratory Medicine 1*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I. 8 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.
352. *Pathology and Laboratory Medicine 2*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) II. 7 hr. PR: Path. 351. Continuation of Path. 351.
353. *Oral Pathology 2*. I. 2 hr. PR: Path. 338; consent. Continuation of Path. 338.
355. *Oral Disease Diagnosis and Management*. (For dental students, third year.) II. 1 hr. PR: Path. 338, 353, consent. Oral and systemic diseases are presented clinically, radiographically, and histologically. Diagnosis is established and treatment arrived at through group discussion.
356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 or 351; consent. Microscopic and gross specimens from selected autopsies.
382. *Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353, consent. Microscopic study of head and neck lesions.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.
491. *Advanced Study*. 1-3 hr. PR: Consent. Specialized study in subspecialty, such as blood banking, clinical chemistry, immunopathology. (*Special lectures and/or seminar.*)
497. *Research*. I, II. 1-15 hr. PR: Consent.

## **Pharmacology and Toxicology**

William W. Fleming, Ph.D., Chairperson  
Charles R. Craig, Director of Graduate Studies

Pharmacology and Toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of Master of Science and Doctor of

Philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, immunotoxicology, and renal, hepatic, and pulmonary toxicology.

### **Admission Requirements**

Regular applicants for the graduate program in pharmacology and toxicology should present, as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; four semesters of chemistry including two semesters of organic chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Health Sciences Center, Morgantown, WV 26506.

### **Master of Science**

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is available as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project (thesis). The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 310 and 312, Statistics 311, Pharmacology and Toxicology 361, 363, 364, 367, 461, 462, and 497. Most students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research in lieu of a thesis.

The department is now offering a special master's program in pharmacology and toxicology. This is a limited program and is only available to residents in the occupational medicine program. This is a non-thesis program. Course requirements are minimal since students will have already completed the M.D. degree. They will consist of:

1. Completion of a laboratory research project in toxicology the results of which will be presented to the department both as a written report and a formal oral presentation.
2. Demonstrated proficiency in the field of toxicology as evidenced by passing a comprehensive oral examination in the area of occupational toxicology given by a committee of three faculty members.
3. A minimum of 36 credit hours approved by the department.
4. Successful completion of the course in occupational toxicology (Pcol. 362) with a grade of B or better.
5. Participation in a toxicology journal club where the current research literature is reviewed.
6. Attendance at departmental seminars relating to toxicology.

Master's committees will consist of no fewer than three members with no more than one from outside the department, the majority of which will be

regular members of the graduate faculty including the chairperson. No more than one person may be a non-member.

## **Doctor of Philosophy**

Before official admission to candidacy for the doctorate, the student must satisfactorily complete a grant writing exercise, an acceptable progress report, and an oral comprehensive qualifying examination. When a student has submitted a grant proposal, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral qualifying examination will be administered in January of the student's third year in the program.

## **Dissertation**

Upon admission to candidacy for the degree of Doctor of Philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation that makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

## **Research and Instruction**

**Research Areas** — Autonomic pharmacology: Autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release, and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, renal toxicology, immunotoxicology, and environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## **Pharmacology and Toxicology (Pcol.)**

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
243. *Pharmacology for Pharmacy Students*. I. 4 hr. PR: Completion of first year in Pharmacy; approval of course director. Principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
360. *Pharmacology and Therapeutics*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacological actions and therapeutic uses of drugs.
361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.

362. *Occupational Toxicology*. II. 3 hr. PR: Consent. General principles of toxicology with special emphasis on occupational health. Classes of chemicals which pose problems in the work place will be emphasized.
363. *Toxicology*. I. 3-4 hr. (Variable credit, majors enroll for 4 hr.; non-majors for 3 hr.) PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on molecular mechanisms of toxicity. (3-4 hr. lec.)
364. *Advanced Pharmacology*. I. (Alternate Years.) 1-5 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology and advanced lectures in biochemical, endocrine, pulmonary, and cardiovascular pharmacology (1-5 hr. lec.)
367. *Advanced Neuropharmacology*. I. 1-5 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion on drug receptor theory, neurophysiological aspects of pharmacology, supersensitivity, and the actions of drugs on the central and peripheral nervous system. (1-5 hr. lec.)
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.
490. *Teaching Practicum*. I, II. 1-3 hr. per sem. PR: Pcol. 361 and consent. (For advanced graduate students.) Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology

George A. Hedge, Chairperson

Stanley D. Yokota, Chairperson of Graduate Studies Committee

Degrees Offered: M.S., Ph.D.

The Ph.D. program is designed to produce physiologists of high quality, capable of conducting independent research and being effective teachers. Students in our department are exposed to all aspects of physiology and a variety of related sciences. The master's program is designed as an introduction to research in physiology for students interested in, but not yet committed to, a research career. Students in this program receive training in the fundamentals of physiology and experience in a research laboratory.

## Admission Requirements

Applicants should have a strong background in biology and/or chemistry. In addition to a basic biology course, it is strongly recommended that applicants have taken cellular or molecular biology and an introductory physiology course; a course on comparative anatomy also provides particularly useful background information. Inorganic and organic chemistry are basic requirements, while physical chemistry is recommended, but not required. Finally, as several areas of physiology require an understanding of the fundamentals of calculus and physics, introductory courses on these subjects are also essential.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application

form, and Graduate Record Examination scores (aptitude and one advanced test). Applicants from non-English speaking countries also need a Test of English as a Foreign Language (TOEFL) score in excess of 550. A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as May of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

## **Master of Science**

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first two semesters are devoted largely to course work in physiology (12 hours of Graduate Physiology, 4 hours of Neurophysiology, and 4 hours of Physiological Methods). Students are also introduced to the research interests of the faculty through the graduate colloquium and rotations in some faculty members' laboratories. At the end of the second semester, students pick a thesis adviser and begin work in that laboratory during the summer. The second year is spent primarily on research for and writing of the master's thesis. Students are required to take 2 hours of Advanced Physiology and present two research seminars during the year.

## **Doctor of Philosophy**

The first year curriculum familiarizes the student with the basic information and principles that form a background for advanced work in physiology. Much of this overlaps with the basic science material presented to medical students so that all students attend several medical school courses, including biochemistry and neurophysiology. Much of the first year is devoted to graduate physiology (6 hours/semester). This course is based upon lectures in medical physiology, supplemented with conference sessions that introduce students to current literature. Finally, students lacking a statistical background are expected to take a basic statistics course.

In addition to this course work, students are introduced to the research interests of the physiology faculty through the graduate colloquium and rotations in some faculty members' laboratories. The latter are designed to help students choose a thesis adviser by exposing them to the experimental approaches and techniques used in different laboratories within the department.

During the first summer, students are expected to begin research projects in a departmental research laboratory of their choice. This allows a student to explore an area of research interest, and to develop a working relationship with a faculty member, without a firm commitment to pursue a thesis project in that laboratory.

During the second year the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses include: Advanced Physiology (12 hours), Physiological Methods (4 hours), Graduate Colloquium (2 hours), Graduate Seminar (1 hour), and a Teaching Practicum.

The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. In addition, the student begins to develop his/her teaching skills. The

purposes of the graduate colloquium and seminar are twofold. First, they give students an opportunity to become informed of the latest scientific advances. Secondly students have an opportunity to develop and practice presentation of research seminars. In addition to presentations by faculty and students from the Department of Physiology, faculty members from other departments at WVU and from other institutions are invited to present seminars in the program.

After successful completion of the second academic year, the student takes a two-part qualifying examination. The qualifying examination consists of a comprehensive written examination covering all of the major areas of physiology, followed by a written and oral research design examination. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy.

During the third and fourth years the student may enroll in elective courses. Yearly participation in the teaching practicum provides additional experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research. Results of this effort are presented annually in the graduate colloquium. During these years the student will attend and present papers at national meetings of scientific societies (e.g., American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences). The Ph.D. degree generally can be completed in four years.

## Research and Instruction

**Research Areas**—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, muscle, neural, renal, and respiratory physiology.

## Physiology (Physi.)

Graduate Faculty: Members Baylis, Brown, Castranova, Connors, Franz, Frazer, Gladfelter, Goodman, Hedge, Huffman, Johnson, Lee, Miles, Millecchia, Stauber, and Yokota.

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lec., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology.
248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lec., 2 lab.
341. *Physiological Methods* 1. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology.
342. *Physiological Methods* 2. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology.

343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lec., 1 conf., 1 lab.
344. *Medical Physiology 1*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 5 lec., 1 conf.-lab.
345. *Medical Physiology 2*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 5 hr. PR: Physi. 344 and consent of department chairperson. Continuation of Physi. 344. 5 lec., 1 conf.-lab.
346. *Neurophysiology*. (For graduate students in medical center basic sciences departments and a limited number of regular full-time graduate students.) II. 1-4 hr. PR: Math. 3 or 141, Phys. 1 and 2 or consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 1-3 lec., 1 conf.
350. *Graduate Physiology 1*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) I. 6 hr. PR: Calculus, college physics, organic chemistry, biology, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control.
351. *Graduate Physiology 2*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) II. 6 hr. PR: Physi. 344 or 350 and consent of department chairperson. Continuation of Physi. 350.
399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate standing and consent. (Graded as S or U.)
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1 hr. PR: Consent. (Graded as S or U.)

# School of Dentistry

W. Robert Biddington, Dean  
Harry J. Bianco, Associate Dean  
William L. Graham, Associate Dean  
William R. McCutcheon, Associate Dean  
James Overberger, Associate Dean

## Degrees Offered

D.D.S. in Dentistry  
M.S. in Endodontics  
M.S. in Orthodontics  
B.S. in Dental Hygiene  
M.S. in Dental Hygiene

## Historical Background

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

## Mission

- To provide the people of West Virginia with an oral health center for education, research and service;
- To contribute to and improve the dental health of the citizens of West Virginia, the United States, and all nations.

The School of Dentistry of West Virginia University offers degrees of Doctor of Dental Surgery, Masters of Science in Endodontics, Orthodontics, and Dental Hygiene, and Bachelor of Science in Dental Hygiene. The Department of Oral and Maxillofacial Surgery offers one four year residency. Seven general practice residencies are offered by the Department of Hospital Dentistry. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

## Accreditation

All programs are accredited by the Commission on Dental Accreditation of the American Dental Association.

## Administration

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by four associate deans and the clinical and health sciences center chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. The students, treating their assigned patients under close supervision of faculty, are provided practical experience while rendering a much needed service to thousands of patients annually.

## Books and Instruments

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses. All dental students must maintain a library of required textbooks through graduation. Used books, instruments, and equipment are not acceptable.

## Organizations

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Research.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Research during the period of enrollment in the School of Dentistry.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of Dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

**Doctor of Dental Surgery Program (D.D.S.)**

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants are considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

**Admission Requirements**

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements, appropriate completion of all application instructions, submission of all transcripts from each college attended, personal interview, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding initial enrollment).

Application for admission in the Fall of 1990 should be made promptly upon completion of the 1988-89 school year, even if the applicant has not completed all the requirements as listed.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisites for admission include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric, or equivalent .....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Health Sciences North, WVU Health Sciences Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the

West Virginia University School of Dentistry in the Fall of 1990, is November 1, 1989. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet; applicants should review them carefully. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.

Each applicant is required to complete the Dental Admission Test satisfactorily. The test should be taken in April, before making application in June, for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Final acceptance of a student is contingent upon satisfactory completion of all requirements.

## **Requirements for the Degree (D.D.S.)**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
2. Shall have completed the prescribed curriculum for each of the academic sessions.
3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

## **Curriculum**

The basic required courses in the curriculum are presented throughout the first seven semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. In addition to the required courses, fourth-year students are required to register for at least 3 hours of electives during each semester enrolled.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and, at the same time, they serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairperson and the Associate Dean for Academic Affairs. The student will pursue the approved curriculum through completion of the D.D.S. program.

Additional requirements include participation in mock board examinations by fourth-year students and three weeks of remote-site training by all students. Furthermore, students must satisfactorily complete all courses that are attempted.

Students, having developed competency in all clinical disciplines, and having met all other requirements, are eligible for consideration for graduation at the end of term I of the fourth year.

## **Promotion**

At the end of each grading period (i.e., each academic semester or session) all students will have their individual progress reviewed by the academic standards committee convened for their class. The progress of each student in the curriculum is governed by a set of minimum acceptable performance standards upon which the academic standards committee bases its decisions.

The standards consist of three categories: (1) scholastic performance; (2) clinic utilization; and (3) professional development. Scholastic performance requires that each student must earn a specified grade-point average to be promoted to the succeeding year. Clinic utilization requires that each student must utilize a specified percentage of available clinic time to demonstrate steady progress toward attainment of clinical competency. Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the student's personal behavior and patient management.

These performance standards are explained in detail in the "Curriculum and Academic Standards Statement for the WVU School of Dentistry." All first-year students are presented this statement prior to entering school and are required to acknowledge by their signature that they have read and accepted the conditions set by the material contained therein.

At the completion of each academic term, following the Committee on Academic Standards meetings, the status of each student is reported to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, or be suspended or dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the appropriate Committee on Academic Standards and the Dean.

## SCHOOL OF DENTISTRY COURSE SCHEDULE

First Year—Didactic Courses	Credit Hours	1st Sem.	2nd Sem.	S.
300—Anesthesiology .....	1			x
303—Oral Diagnostic Techniques .....	2		x	
304—Operative Dentistry .....	4		x	
305—General Biochemistry .....	4		x	
306—Gross Anatomy of the Trunk and Extremities .....	4	x		
307—Gross Anatomy of Head & Neck & Neuroanatomy .....	5		x	
309—Microanatomy and Organology .....	4	x		
310—Dental Anatomy and Occlusion .....	6	x	x	
311—Periodontics .....	1			x
312—Dental Materials .....	3	x		
313—Removable Prosthodontics .....	3	x		
314—Fixed Prosthodontics .....	1			x
315—Periodontics .....	2		x	
316—Removable Prosthodontics .....	1			x
317—Removable Prosthodontics .....	1		x	
318—Oral Histology and Embryology .....	2		x	
319—Pediatric Dentistry .....	1		x	
320—Community Dentistry .....	1	x		
321—Endodontics .....	2			x
322—Operative Dentistry .....	2			x
323—Clinic Orientation .....	1			x
<b>Second Year—Didactic Courses</b>				
302—Microbiology .....	5	x		
325—Practice Management .....	1		x	
327—Oral Radiology .....	1	x		
328—General Pathology .....	5		x	
329—Operative Dentistry .....	2	x		
330—Community Dentistry .....	1	x		
331—Dental Anatomy and Occlusion .....	2			x
332—Community Dentistry .....	1		x	
333—Physical Diagnosis .....	1		x	
334—Removable Prosthodontics .....	3	x	x	
335—Pediatric Dentistry .....	2	x	x	
336—Fixed Prosthodontics .....	6	x	x	
337—Oral Diagnosis .....	1		x	
338—Oral Pathology .....	3		x	x
339—Oral Surgery .....	1		x	
340—Periodontics .....	1	x		
341—Removable Prosthodontics .....	2			x
342—Periodontics .....	1	x		
343—Fundamentals of Physiology .....	5	x		
345—Principles of Orthodontics .....	1		x	
346—Orthodontic Technics .....	1			x
347—Management of Medical/Dental Emergencies .....	1			x
348—Operative Dentistry .....	1			x
349—Hospital Dentistry .....	1			x
<b>Second Year—Clinical Courses</b>				
375—Dental Practice Management .....	1-3		x	x
376—Removable Prosthodontics .....	2-6		x	x
377—Periodontics .....	1-4		x	x
380—Endodontics .....	1-4		x	x
383—Operative Dentistry .....	2-8		x	x
384—Oral Surgery .....	1-3		x	x
386—Pediatric Dentistry .....	1-5		x	x
387—Clinical Oral Diagnosis .....	1-3		x	x
389—Fixed Prosthodontics .....	2-6		x	x
396—Clinical Oral Radiology .....	1-3		x	x

## SCHOOL OF DENTISTRY COURSE SCHEDULE (Continued)

	Credit Hours	1st Sem.	2nd Sem.	S.
<b>Third Year—Didactic Courses</b>				
326—Community Dentistry .....	2		x	
347—Management of Medical/Dental Emergencies .....	1		x	
350—Removable Prosthodontics .....	2	x	x	
352—Community Dentistry .....	2	x	x	
353—Oral Pathology .....	2	x		
355—Clinico-Pathologic Correlation Conference .....	1		x	
357—Fixed Prosthodontics .....	2	x	x	
359—Oral Surgery .....	2	x	x	
360—Pharmacology .....	4	x		
361—Pediatric Dentistry .....	1	x		
362—Endodontics .....	1	x		
363—Periodontics .....	2	x	x	
364—Pain and Anxiety Control .....	1	x		
365—Orthodontics .....	1		x	
366—Pediatric Dentistry .....	1		x	
371—Practice Management .....	2	x		
372—Practice Management .....	1		x	
373—Practice Management .....	1		x	
374—Principles of Medicine .....	2	x		
<b>Third Year—Clinical Courses</b>				
375—Practice Management .....	1-3	x	x	x
376—Removable Prosthodontics .....	2-6	x	x	x
377—Periodontics .....	1-4	x	x	x
380—Endodontics .....	1-4	x	x	x
383—Operative Dentistry .....	2-8	x	x	x
384—Oral Surgery .....	1-3	x	x	x
385—Orthodontics .....	1-3	x	x	x
386—Pediatric Dentistry .....	1-5	x	x	x
387—Clinical Oral Diagnosis .....	1-3	x	x	x
388—Pediatric Dentistry .....	1	x	x	x
389—Fixed Prosthodontics .....	2-6	x	x	x
394—Community Dentistry .....	1-12			x
395—Hospital Dentistry Practicum .....	1-15			x
396—Clinical Oral Radiology .....	1-3	x	x	x
<b>Fourth Year—Didactic Courses</b>				
351—Dental Anatomy and Occlusion .....	1	x		
358—Operative Dentistry .....	2	x		
370—Community Dentistry .....	1	x		
<b>Fourth Year—Clinical Courses</b>				
375—Practice Management .....	1-3	x	x	
376—Removable Prosthodontics .....	2-6	x	x	
377—Periodontics .....	1-4	x	x	
380—Endodontics .....	1-4	x	x	
383—Operative Dentistry .....	2-8	x	x	
385—Orthodontics .....	1-3	x	x	
386—Pediatric Dentistry .....	1-5	x	x	
387—Clinical Oral Diagnosis .....	1-3	x	x	
388—Pediatric Dentistry .....	1	x	x	
389—Fixed Prosthodontics .....	2-6	x	x	
394—Community Dentistry .....	1-12	x	x	
395—Hospital Dentistry Practicum .....	1-15	x	x	
396—Clinical Oral Radiology .....	1-3	x	x	
397—Special Topics .....	1-15	x	x	

The relationship of the number of elective and/or required hours during the fourth year may vary with each student depending upon the individual student's progress.

## Courses of Instruction in Dentistry

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Associate Dean for Academic Affairs.

### Community Dentistry (Dent.)

Professor McCutcheon (Chairperson); Associate Professor Meckstroth; Clinical Professor Thompson; Clinical Associate Professors Ingersoll and Wilson; Clinical Assistant Professors Broughton, Kuhn, Morgan, and Taylor; Clinical Instructors Bondurant, Goldstein, Krieg, Vance, Weber, and Weese.

- 320. *Community Dentistry*. II. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
- 330. *Community Dentistry*. I. 1 hr. Lectures provide the student with a basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
- 352. *Community Dentistry*. Yr. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
- 370. *Community Dentistry*. 1 hr. PR: Consent. Clinical, social, and community health considerations in the oral health care of geriatric patients.
- 394. *Community Dentistry*. I, II. 1-15 hr. Field experience in various aspects of community health.

### Dental Practice Management (Dent.)

Professors Puderbaugh (Chairperson) and Walker; Associate Professor Hickman; Assistant Professor Estep.

- 325. *Practice Management*. II. 1 hr. A lecture course designed to prepare dental students in the concepts of four-handed dentistry.
- 371. *Practice Management*. I. 2 hr. PR: Dent. 325. A lecture series on the fundamentals of practice management, including the organization and development of the practice, personnel and financial management, and the introduction to TEAM dentistry.
- 372. *Practice Management*. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
- 373. *Practice Management*. II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
- 375. *Practice Management*. Yr. and S. 1-3 hr. PR: Consent. Clinical practice using auxiliaries, including those trained in expanded functions.

### Endodontics (Dent.)

Professor Emeritus Alberico; Professors Biddington, Griffin, and Skidmore (Chairperson); Clinical Professor Balaban; Clinical Assistant Professors Jarvis and Taylor; Clinical Instructor Moreschi.

- 321. *Endodontics*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
- 362. *Endodontics*. I. 1 hr. Lectures on rationale, diagnosis, prevention, and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae.

380. *Endodontics*. Yr. and S. 1-4 hr. Clinical endodontic instruction in order to develop the skills and judgment necessary to treat diseases of the dental pulp and their sequelae.
390. *Clinical Endodontics*. I, II, S. 1-5 hr. (May be repeated for credit.) PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Hospital Dentistry (Dent.)**

Professor Welch (Chairperson); Associate Professors Bakos and Oscanyan; Assistant Professor Marshall; Clinical Professor Cogan; Clinical Associate Professors Black, Christian, Gilbert, Haddox, Haley, Hancock, Kuyk, Jackfert, McCutcheon, Rosenfeld, Skaiff, and Wilkerson; Clinical Assistant Professors Brace, Buch, Capriolo, Coffman, Courtney, Fagan, Kennedy, Lee, Payne, Russell, Sokolosky, Vargo, and Wilbourn.

333. *Physical Diagnosis*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
347. *Management of Medical/Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
374. *Principles of Medicine*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
395. *Hospital Dentistry Practicum*. I, II, S. 1-15 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## **Operative Dentistry**

Professors Hart and Sausen (Chairperson); Associate Professors Foor, Gladwin, Rodeffer, F. Stevens, and J. Stevens; Assistant Professor Dickinson; Clinical Associate Professors Chapman, Frye, and Naylor; Clinical Instructor Getty.

304. *Operative Dentistry*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Characteristics and treatment of caries emphasized.
322. *Operative Dentistry*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Certain fundamentals of pedodontics introduced.
329. *Operative Dentistry*. I. 2 hr. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.

348. *Operative Dentistry*. S. 1 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Treatment planning procedure is reviewed and examined.
358. *Operative Dentistry*. II. 1 hr. More complex and advanced techniques for clinical practice with emphasis on new developments throughout the scope of operative dentistry.
383. *Operative Dentistry*. Yr. and S. 2-8 hr. Instruction in the clinic setting includes comprehensive diagnosis and treatment planning, computer assisted records, plaque control, caries control, and single tooth restorations. Sufficient variety and depth of experience occurs to obtain competence for independent practice of operative dentistry.

### **Program in Dental Materials**

Professors Hart and Overberger; Associate Professor M. Gladwin; Assistant Professor Dickinson.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Oral Diagnosis and Radiology**

Professors Bowers, Graham (Chairperson), Pifer, and H. Smith; Assistant Professor Price; Instructor Tupta.

303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.
323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
327. *Oral Radiology*. I. 1 hr. The physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
337. *Oral Diagnosis*. II. 1 hr. Didactic instruction with further application of diagnosis procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
387. *Clinical Oral Diagnosis*. Yr. and S. 1-3 hr. PR: Consent. Clinical application of principles presented in Dent. 303 and 337, providing opportunities for observation and analysis of clinical problems.
396. *Clinical Oral Radiology*. Yr. and S. 1-3 hr. Clinical application of principles presented in Dent. 303 and 327 with additional instruction in techniques and interpretation of radiographs with special emphasis to role played in oral diagnosis.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Oral Pathology**

Professors Bouquot and Keyes; Clinical Assistant Professor Young.

328. *General Pathology*. (For dental and graduate students). II. 5 hr. PR: Consent. The broad spectrum of human diseases is studied at the clinical, physiological, and biochemical levels.

338. *Oral Pathology*. (For dental students.) II. and S. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
353. *Oral Pathology*. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.
355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting oral lesions are demonstrated clinically, radiographically, and histologically. Diagnosis is established and treatment discussed by faculty and students.
382. *Advanced Oral Histopathology*. (For dental and graduate students, residents, and interns.) I and II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents, and interns.) I. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

## Oral and Maxillofacial Surgery

Professor Emeritus Campbell; Professor Graves (Chairperson); Assistant Professor Christian; Clinical Professors Davidson and Poindexter; Clinical Associate Professors Fogarty, Lattanzi, Oliverio, Syner, and Wine; Clinical Assistant Professors Carson, Doran, Douglas, John, King, Linkous, and Salzer; Clinical Instructor Lindsay.

300. *Anesthesiology*. II and S. 1 hr. Lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
339. *Oral Surgery*. II. 1 hr. Didactic instruction in basic surgical principles as applied to the extraction of teeth and dentoalveolar surgery.
359. *Oral Surgery*. I and II. 2 hr. PR: Consent. Didactic instruction in patient evaluation, complicated exodontia, preprosthetic surgery, diagnosis, surgical and adjunctive treatment of disease, injuries, and defects of human jaws and associated structures.
364. *Pain and Anxiety Control*. I. 1 hr. PR: Consent. Instruction in the psychology, physiology, and clinical techniques of controlling pain and anxiety in the dental patient.
384. *Oral Surgery*. Yr. and S. 1-3 hr. PR: Consent. Clinical instruction in outpatient and inpatient oral surgery necessary to provide comprehensive care for the dental patient.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

## Orthodontics

Professor Legan (Chairperson); Assistant Professors Kitchin and Staggers; Clinical Associate Professors Martin, Overman, Valentine and Wilfong; Clinical Assistant Professors Gift and Phelps.

345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.

346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
365. *Orthodontics*. II. 1 hr. Introduction to clinical orthodontics; lectures on case analysis, treatment planning, and clinical procedures involved in interceptive, preventive, and adjunctive treatment of malocclusions.
385. *Orthodontics*. Yr. and S. 1-3 hr. Clinical management of selected malocclusion problems.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Pediatric Dentistry**

Professor Fenton (Chairperson); Assistant Professor Holmes; Clinical Associate Professor Gwynn; Clinical Instructors E. Brannon, R. Brannon, Koster, and Patriarca.

319. *Pediatric Dentistry*. II. 1 hr. PR: Consent. Normal growth and development presented from physical, intellectual, psychological, and oral perspectives. Behavior of children in dental environment reviewed and strategies for management examined.
335. *Pediatric Dentistry*. I and II. 2 hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: oral diagnosis/treatment planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the developing occlusion and trauma to the dentition and oral structures.
361. *Pediatric Dentistry*. I. 1 hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: abnormal dental development, oral habits, and adolescent dentistry.
366. *Developmentally/Medically Compromised Child*. I, II. 2 hr. PR: Consent. Didactic instruction in dentistry for the developmentally disabled and/or medically compromised child.
386. *Pediatric Dentistry*. I, II, S. 1-5 hr. PR: Consent. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.
388. *Pediatric Dentistry*. I, II, S. 1 hr. PR: Consent. Clinic experience in providing comprehensive dental care for the developmentally disabled and medically compromised child.
397. *Special Topics* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic and clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Periodontics**

Professors Crout and Morrison (Chairperson); Associate Professors Hornbrook, Jagannathan, and Stuchell; Clinical Associate Professor Wanker; Clinical Assistant Professors Milem and Reed; Adjunct Associate Professor Murphy.

311. *Periodontics*. S. 1 hr. Introduction to periodontal diseases, their diagnosis and treatment. Laboratory instruction is included.
315. *Periodontics*. II. 2 hr. Study of professional communication and introduction to the theory and practice of preventive dentistry.
332. *Periodontics*. II. 1 hr. Lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition.
340. *Periodontics*. I. 1 hr. Intermediate didactic instruction in periodontal therapy including basic surgery and post-operative care.

342. *Periodontics*. I. 1 hr. PR: Consent. Clinical introduction to the practice of preventive dentistry.
363. *Periodontics*. Yr. 2 hr. Advanced didactic instruction in periodontal therapy including special surgical procedures.
377. *Periodontics*. Yr. and S. 1-4 hr. Clinical experience in the diagnosis and treatment of periodontal diseases.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Fixed Prosthodontics**

Professor Emeritus Adams; Professors Bianco (Chairperson), Connor, Kwiatkowski, and Tucker; Associate Professor N. Smith; Clinical Instructor Boyajiam.

314. *Fixed Prosthodontics*. S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
336. *Fixed Prosthodontics*. Yr. 6 hr. PR: Consent. Lectures and laboratory exercises involving principles and technics of crown and bridge prosthodontics. Topics include types of dental bridges, their indications, and contraindications.
357. *Fixed Prosthodontics*. Yr. 2 hr. PR: Consent. Lectures concerned with clinical practice; diagnosis, treatment planning, treatment procedures, ceramics, esthetics, and occlusion.
389. *Fixed Prosthodontics*. Yr. and S. 1-6 hr. PR: Consent. Clinical application of the theory and practice of crown and bridge dentistry.

## **Program in Dental Anatomy and Occlusion**

Professor Crout; Associate Professors Foor, Rodeffer, and Stewart; Clinical Instructor Boyajiam.

310. *Dental Anatomy and Occlusion*. Yr. 6 hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.
331. *Occlusion*. S. 2 hr. PR: Consent. Didactic and clinic/laboratory instruction in the basic techniques and procedures associated with the treatment of conditions related to faulty occlusion.
351. *Occlusion*. II. 1 hr. PR: Consent. Advanced study of the science of occlusion with particular attention to its impact on the clinical diagnosis and treatment of occlusal disorders.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Maxillofacial Prosthodontics**

Professors Bianco (Chairperson) and Kluth.

397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Removable Prosthodontics**

Professor Bianco (Chairperson); Associate Professors Beaumont, Harper, Roth, and Stewart; Clinical Assistant Professor Camele.

313. *Removable Prosthodontics*. I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.

316. *Removable Prosthodontics*. S. 1 hr. Lectures and laboratory practice in maxillo-mandibular relationships, mandibular and occlusion.
317. *Removable Prosthodontics*. II. 1 hr. PR: Consent. A lecture course providing an introduction to removable partial denture prosthetics.
334. *Removable Prosthodontics*. Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
341. *Removable Prosthodontics*. S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.
350. *Removable Prosthodontics*. Yr. 2 hr. Lectures concerned with clinical practice of complete and partial removable prostheses.
376. *Removable Prosthodontics*. Yr. and S. 2-6 hr. Continued application of the theory and practice of removable prosthodontics.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Advanced Education Programs**

The Department of Endodontics and the Department of Orthodontics offer programs of advanced study leading to the degrees of Master of Science (M.S.). Programs leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Toxicology, and Physiology. The Department of Oral and Maxillofacial Surgery offers one four-year residency. Seven general practice residencies also are offered by the Department of Hospital Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Graduate Affairs, WVU School of Dentistry, Morgantown, WV 26506.

## **Master of Science in Dental Hygiene**

### **Areas of Specialization**

- Office Management
- Special Patients
- Education/Administration
- Basic Sciences

The School of Dentistry and its Department of Dental Hygiene offer a program of advanced study and specialized training leading to the degree of Master of Science. This program requires the completion of a minimum of 36 semester hours through full-time or part-time enrollment in the School of Dentistry. It is designed to qualify dental hygienists for careers in teaching, administration, research and management.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Research and Graduate Affairs, School of Dentistry. Applications should be filed by July 1 for admission in the fall semester and by November 1 for spring semester enrollment.

### **Requirements for Admission to the Dental Hygiene Program**

1. Graduation with a baccalaureate degree in dental hygiene from an accredited dental hygiene program or graduation with a baccalaureate degree

in another field of study from an approved institution of higher education while holding a certificate or associate degree in dental hygiene from a program fully accredited by the American Dental Association, Commission on Dental Accreditation.

2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 2.5 or above is required.

3. Completion of one of the following standardized tests: the Graduate Record Examination (GRE) general aptitude test with a score of 1,000 or above or the Miller's Analogy Test with a score of 50 or above.

4. Submission of all information requested in the graduate application form with the Office of the Associate Dean.

**Requirements for Degree of Master of Science**

1. Completion of a minimum of 36 semester credit hours: 18-24 basic required credit hours and 12-18 credit hours in an elective area(s) of dental hygiene specialization. Four elective areas of specialization are offered. The student may choose 1-2 of these areas of study. Courses within these specializations are taught by a number of schools within the University. An individualized program will be devised for each student which must conform to one of the following options:

- a. Thesis: A minimum of 30 semester credit hours, plus a maximum of 6 hours in research leading to an acceptable thesis. Oral defense of the thesis is required.
- b. Non-thesis: A minimum of 36 semester credit hours, with no thesis required.

2. Successful completion of a comprehensive examination for non-thesis students consisting of a series of tests covering all areas specified in the plan of study. This examination will be administered after the majority of the student's coursework has been completed.

3. Achievement of a 3.0 GPA or an overall academic average of at least B in all work attempted in the master's program. A grade of C or below in two courses will require a faculty review of the student's progress. A third C will result in suspension from the program.

4. Removal of all conditions, deficiencies and incomplete grades. Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

**M.S.D.H. Curriculum**

<i>Basic Requirements</i>	<i>Credit Hours</i>
Educational Psychology 311—Statistics .....	3
Educational Psychology 330—Test and Measurement .....	3
Dental Hygiene 380—Critical Issues in Health Care .....	3
Dental Hygiene 381—Expanded Functions .....	3
Dental Hygiene 220—Personal Computing for the D.H. ....	3
Dental Hygiene 385—Research Methods for the D.H. ....	3
Dental Hygiene 397—Research (Thesis) .....	(6)

18-24

## **Elective Area(s) of Dental Hygiene Specialization**

Dental Hygiene 391 and Dentistry 397 Courses

Courses taught by the School of:

Business and Economics

Human Resources and Education

Medicine

Courses taught by the Department of Community Health

Multidisciplinary Studies Courses

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12-18

TOTAL 36

## **Dental Hygiene (Dnt. Hy.)**

220. *Microcomputing for Dental Hygienists*. II, S. 3 hr. PR: Consent. Introduction to microcomputing with hands-on experiences in patient record keeping, accounting, insurance handling and word processing.
380. *Dental Hygiene Seminar and Practice 1*. I. 3 hr. PR: Graduate standing and consent. Examination of the critical environmental issues affecting the future of health care; particular impact on oral health care trends will form major focus. Dental hygiene clinical practice is also included.
381. *Dental Hygiene Seminar and Practice 2*. II. 3 hr. PR: Dnt. Hy. 380. Expanded services for the dental hygienist with emphasis on restorative and periodontal functions.
385. *Research Methods for the Dental Hygienist*. II. 3 hr. PR: Ed. Psych. 311. Methods and techniques of research in dental hygiene. Major emphasis on planning and evaluating health programs, conducting oral health surveys, designing experiments and critically analyzing research results.
397. *Dental Hygiene Research*. I, II, S. 3-6 hr. PR: Consent. Students will design a research protocol, conduct experimental research and prepare a thesis of original dental hygiene research.

## **Master of Science in Endodontics**

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.). The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Graduate Affairs. Applicants will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after December 1.

## **Requirements for Admission to the Endodontic Program**

1. Graduation from an accredited school of dentistry.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

## **Requirements for Degree of Master of Science**

1. Fulfillment of general WVU graduate study requirements.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 57 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (7 hours).
6. Must have demonstrated satisfactory clinical competency in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## **Dentistry (Dent.)**

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

## **Endodontics (Dent.)**

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.
497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

## **Microbiology (M. Bio.)**

317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available. Pathogenic microorganisms, including immunology and antimicrobial agents.

## **Pathology (Path.)**

382. *Oral Histopathology*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

## **Pharmacology and Toxicology (Pcol.)**

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

## **Statistics (Stat.)**

311. *Statistical Methods* 1. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to Ed. P. 311 and Psych. 311.)

## **Master of Science in Orthodontics**

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.). The program requires a minimum of 34 months (three academic years and two summers) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Postdoctoral Programs. Those applicants approved for admission to the program will be notified December 1.

### **Requirements for Admission to the Orthodontic Program**

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 3.00 is required for admission.
3. Each applicant must file with the department all information requested in the department application form.

### **Requirements for Degree of Master of Science**

1. Fulfillment of general WVU graduate study requirements.
2. Thirty-four months (three academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 60 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic sciences subjects, a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## **Anatomy (Anat.)**

315. *Advanced Applied Anatomy*. I. 3 hr. PR: Consent. Advanced descriptive and functional anatomy of the head and neck, especially as it relates to orthodontics. The course stresses the oral-facial region, the skullbase, and the architecture of the skull in relation to masticatory forces.
316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

## Orthodontics (Dent.)

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.
419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
420. *Cephalometrics*. S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. II. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

## Pathology (Path.)

397. *Pediatric Oral Pathology*. I. 2 hr. PR: Consent. Lecture and seminar course on inherited diseases and other pathologic situations of oral cavity and face specific for pediatric age group.

## Statistics (Stat.)

311. *Statistical Methods 1*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to Ed. P. 311 and Psych. 311.)

## Dental Hygiene

Dental hygiene, a department of the School of Dentistry, offers a four year curriculum leading to a B.S. in Dental Hygiene. The program is, in part, based in the liberal arts, but it is also a thoroughly professional education. The format of the curriculum is not conventional, in that it includes courses from many academic disciplines. The program prepares students through classroom and practical experiences.

The objectives of the program in dental hygiene include the following:

- To prepare you to perform (with the competence specified by our faculty, the state boards of dental examiners, and employers of dental hygienists) those oral health services legally approved in any state,

district, or territory of the United States. These services include observation, recording, prevention, treatment, education, and communication.

- To prepare you to perform with clinical skill any dental auxiliary service, excluding those of a dental laboratory technician.
- To prepare you to teach clinical skills or present information in dental auxiliary education programs.
- To prepare you to coordinate or administer community or public health dental health programs.
- To prepare you to have a keen sense of social awareness and professional responsibility as a dental hygienist.
- To prepare you to continue to develop as a professional, through additional formal training, self-directed study, and independent thought.
- To prepare you to understand and adapt to new developments and changes in the scientific, sociologic, and practical aspects of your profession.
- To prepare you, through a sound educational foundation, for post-baccalaureate education.

## **Admission**

To get application and reference forms, please write to the Department of Dental Hygiene, West Virginia University, Morgantown, WV 26506, or to the Office of Admissions, Health Sciences Center, West Virginia University, Morgantown, WV 26506. As soon as possible in the year preceding the year you want to enter the program, you should apply and complete the aptitude tests. Forms for the following year are available in September.

If you have no previous study in higher education, you will apply for admission as a freshman at WVU. You must have a diploma from an accredited high school or preparatory school, and we expect you to have these courses listed on your high school transcript:

English—4 units

Algebra—2 units

Plane geometry—1 unit

Biology—1 unit

Chemistry—1 unit

We pay particular attention to scholastic achievement in science courses. We also expect applicants to rank in the upper one half of their graduating classes.

We require that you take the American College Testing Program examination or the Scholastic Aptitude Test.

We ask for personal references, to be submitted on our reference form. All three references must be sent by the writer of the reference directly to the Department of Dental Hygiene.

The Dental Hygiene Admissions Committee reviews all applications. If you are among the most qualified, we will invite you to come to the campus for a personal interview. You will receive a letter stating the date, time, and place of an interview. Competition for admission to our program is intense, and we give preference to residents of West Virginia.

## **Degree Completion Program**

If you are a registered dental hygienist, we can admit you directly to the Department of Dental Hygiene as a full-time or as a part-time student. To be

eligible for the degree completion program, you must have a certificate or associate degree from an accredited dental hygiene program. You can transfer lower division credits (see "Curriculum Plan"). Your acceptance and placement in the program depends upon your academic record and upon the number of spaces available.

When you apply, we ask you to include complete records of previous study. In addition to an official transcript mailed to us by the registrar of your previous school, we ask you to include catalog descriptions of the courses taken. If you are currently enrolled in a certificate or associate degree program, we ask that you include your program of studies. **You** are responsible for the submission of a complete record package.

You can enter the degree completion program twice a year. Applications can be obtained after September 1 of the year preceeding application to the program.

## **Requirements**

To summarize the admission process for the degree completion program:

- Complete the accredited certificate/associate degree program in which you are currently enrolled or offer proof of a previously completed program.
- Present at least a 2.5 grade-point average for all college work attempted. If your grade-point average is below our minimum, you can petition the Dental Hygiene Admissions Committee for special consideration.
- Successfully complete the Dental Hygiene National Board Examination and submit your score.
- Submit two letters of reference, one from the director of your previous program and one from a clinical instructor. If you have professional experience, substitute a letter from your employer for either of the above.

The Admissions Committee may ask you to come for a personal interview before they make a final decision on your application.

## **Promotion**

At the end of every semester, the Dental Hygiene Committee on Academic Standards reviews the status of every student in the program. The committee recommends promotion or retention to the Dean of the School of Dentistry.

If you fulfill all course requirements and have the necessary grade-point averages, your promotion is unconditional. The necessary grade-point averages for each year are as follows:

Cumulative grade-point average: after first year 1.5; for promotion to second year 1.75; for promotion to third year 2.0; for promotion to fourth year and 2.0 for graduation.

Science/Dental Hygiene grade-point averages are the same for yearly promotion.

The science/dental hygiene average is based on grades earned in these courses or their equivalents: Anatomy 101; Biology 2; Chemistry 11, 12; Dentistry 300; Microbiology 26; Pathology 128, 129; Pharmacology and Toxicology 160; Physiology 141; Dental Hygiene 1-220.

If you do not qualify for unconditional promotion, you may be placed on probation. Probationary status means that you are allowed to make up your deficiencies or repeat the year. If, after repeating the year, you do not reach the

minimum grade-point standard, the committee will reevaluate your status and potential.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Courses of Instruction in Dental Hygiene

Professor Komives (Chairperson); Associate Professors DeBiase, Graves, Krouse, and Sherrill; Assistant Professors Mueller and Raymond; Clinical Instructors Hull and Mullins; School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this catalog or the *WVU Undergraduate Catalog*.)

### Dental Hygiene (Dnt. Hy.)

1. *Orientation to Dental Hygiene*. I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
66. *Technical Expression and Dental Literature*. I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy*. II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology*. II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention*. I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 3 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
160. *Dental Materials*. I. 3 hr. PR: Enrollment in dental hygiene. Lecture and laboratory covering the science and manipulation of dental materials. (2 hr. lec., 1 hr. lab.)
161. *Expanded Functions*. II. 2 hr. PR: Dnt. Hy. 160. Lecture and laboratory covering specialty topics in dentistry for expanded functions, four handed dental assisting, and the placing and carving of amalgam and resin restorations in dentiform teeth. (1 hr. lec., 1 hr. lab.)
162. *Dental Hygiene Clinical Methods*. I. 2 hr. PR: Dnt. Hy. 125. Principles of oral prophylaxis, instruction in the care of special patients, use of diagnostic aids, and nutritional counseling. (2 hr. lec.)

163. *Clinical Dental Hygiene 1. I.* 2 hr. PR: Dnt. Hy. 125. Clinical application of dental hygiene principles and techniques. (2 hr. lab.)
164. *Clinical Dental Hygiene 2. II.* 2 hr. PR: Dnt. Hy. 162, 163. Clinical application of dental hygiene principles and techniques. (2 hr. lab.)
168. *Periodontics. I.* 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics. II.* 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health. I.* 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods. II.* 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice. I.* 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
204. *Advanced Dental Hygiene Methods. I.* 1 hr. PR: Senior enrollment in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings. (1 hr. lec.)
205. *Advanced Clinical Dental Hygiene 1. I.* 5 hr. PR: Senior enrollment in dental hygiene. Clinical experience in traditional and expanded duties; pre- and post-operative care of surgical patients, and radiology. (5 hr. clinic.)
206. *Advanced Clinical Dental Hygiene 2. II.* 3-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures. (3-4 hr. clinic.)
220. *Special Topics in Dental Hygiene. I, II.* 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

# School of Medicine

James Stevenson, Interim Dean

Fred R. Butcher, Associate Dean, Research and Graduate Studies

John W. Traubert, Associate Dean, Student Affairs

David Z. Morgan, Associate Dean, Medical Affairs

Anthony DiBartolomeo, Associate Dean, Clinical Affairs

Robert D'Alessandri, Associate Dean, Ambulatory Care Services

## Degrees Offered

M.D. in Medicine

M.S., Ph.D. in Anatomy

M.S., Ph.D. in Biochemistry (Medical)

M.S., Ph.D. in Microbiology (Medical)

M.S., Ph.D. in Pharmacology and Toxicology

M.S., Ph.D. in Physiology (Medical)

Ph.D. in Biomedical Sciences

B.S. in Physical Therapy

B.S., M.S. in Medical Technology

## Historical Background

The West Virginia University School of Medicine started in 1902 as an affiliate with the College of Physicians and Surgeons of Baltimore. In 1912, the School of Medicine had its formal beginnings as an independent school offering the first two years of basic sciences medical curriculum. The clinical years were completed at another institution. The School of Medicine moved to the current Health Sciences Center in 1957 and inaugurated the four year curriculum in 1960, which coincided with the opening of the 550 bed University Hospital. The first M.D. degrees were awarded to 15 students in 1962.

In 1945 the School of Medicine began a course of study leading to a Bachelor of Science in Medical Technology. The first graduates were awarded a combined degree by the School of Medicine and the College of Arts and Sciences. The program of medical technology in the School of Medicine was established in 1961.

The Division of Physical Therapy accepted its first class of 16 students in 1970. It offers the final two years of a baccalaureate program leading to the degree of Bachelor of Science in Physical Therapy.

In 1972 the Charleston Area Medical Center became affiliated with West Virginia University. This resulted in the West Virginia University Health Sciences Center—Charleston Division which offers a variety of third and fourth year clerkships for medical students. Approximately one third of each class go to Charleston for the third and fourth years of medical education.

The Wheeling Division of the West Virginia University Health Sciences Center was established in 1974 and offers a variety of elective opportunities for students in the fourth year.

## Facilities

The West Virginia University Health Sciences Center has excellent clinical facilities. The Ruby Memorial Hospital offers the most sophisticated medical technology available, including magnetic resonance imagery, litho

tripsy, laser surgery, and the necessary support technology. The Chestnut Ridge Psychiatric Hospital allows the entire spectrum of psychiatric and behavioral problems to be managed. The Mary Babb Randolph Regional Cancer Center, to be completed in 1989, will provide a facility totally dedicated to the diagnosis and treatment of cancer. Dedicated research and teaching space will allow outstanding cancer scientists to work toward the goals of prevention and cure. Areas of cellular biology and immunology research will soon be ongoing at the Cancer Center.

Plans for a sixty bed inpatient rehabilitation center have been finalized and completion is anticipated by the summer of 1990. Students now have the opportunity to investigate occupational medicine as a career. The Department of Occupational Medicine has recently evolved, which complements all of the other existing programs.

## Degree Programs

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

The M.D.-Ph.D. program is available to those students who show exceptional interest and scholarly promise. All of the admission requirements of the School of Medicine and the specific graduate program apply. It is recommended that students apply for the combined degree program after the completion of the first year of medical school. It is to be understood that the following information applies only to students in the School of Medicine who are enrolled in the prescribed curriculum which culminates in the M.D. degree. All other students, undergraduates, or graduates enrolled in other programs in the School of Medicine are governed by the policies found elsewhere in the *Health Sciences Center Catalog*.

## Accreditation

The West Virginia University School of Medicine is accredited by the Liaison Committee on Medical Education (L.C.M.E.).

## Admission Requirements

The student preparing for any career in the health professions must have a keen interest in the sciences. Science courses taken in high school should include as many biology, chemistry and physics courses as possible. A good background in mathematics is strongly recommended.

The following courses are required for consideration of an application to Medical School.

English .....	6 semester hours or equiv.
Biological Sciences (with lab) .....	8 semester hours or equiv.
Inorganic Chemistry (with lab) .....	8 semester hours or equiv.
Organic Chemistry (with lab) .....	8 semester hours or equiv.
Physics (with lab) .....	8 semester hours or equiv.
Social or Behavioral Sciences .....	6 semester hours or equiv.

A quantitative background, including calculus, is recommended. A total of 90 semester hours, exclusive of ROTC and general physical education, is required.

An excess of credit hours or higher degrees does little to offset the disadvantage of low grades when being considered for admission to the

School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Admissions Committee.

### **Pre-Admission Tests**

The scores of the Medical College Admissions Test (MCAT) are one of the factors used by the admissions committee in considering an applicant for admission. The MCAT must be taken within two years of applying to medical school. It is recommended that students take the MCAT during the spring of their junior year in college. This allows for a repeat examination in the fall if necessary. Waiting until fall to take the test could jeopardize an applicant's opportunity since no application for admission is given final consideration until MCAT scores are received by the Admissions Committee. The MCAT score must be recorded prior to closing of admissions on November 15.

Information concerning the time and place of the test can be obtained from your premedical advisor or committee or the Office of Admissions and Records.

### **Application Procedure**

The admission process is initiated by completing the American Medical College Application Service (AMCAS) forms. AMCAS packets may be obtained from the Office of Admissions and Records of the West Virginia University Health Sciences Center, or through most preprofessional advising offices.

Application for admission in August, 1991, should be made at the end of the 1989-90 school year. The last date for filing an application is November 15. The applicant should file as early as possible making certain that recent MCAT scores, current transcripts, and letters of recommendation are available to the Admissions Committee.

Preference in admission is given to West Virginia residents and those non-resident applicants who have strong ties to the state. No one specific factor is used to determine admission. However, careful consideration is given to those personal qualifications which apply to the study and practice of medicine. The criteria for admission include academic performance, course load, letters of recommendation, MCAT scores, motivation, interpersonal skills, and a personal interview.

No applicant is admitted before an interview by the Admissions Committee. All residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Admissions Committee, who notify the applicant of the time and place of the interview. Interviews and consideration of applicants begin in September.

If an applicant is denied admission or does not enroll after acceptance, he/she must reapply in the regular manner for consideration in a subsequent year.

### **Advanced Standing**

Advanced standing positions are offered only in very exceptional circumstances and only to students currently attending L.C.M.E. accredited medical schools. A request for transfer is usually considered during the second year. The application must be received no later than May 15. The applicant must present certification of good standing in the school from which

he/she is transferring. An official transcript of all prior medical school work is required from all medical schools attended. In addition, the results of Part I of the National Board of Medical Examiners must be available before an application can be finalized.

### **Conditions Following Acceptance**

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Admissions Committee.

The student must be aware that furnishing or causing to be furnished false or incorrect information for the purpose of the School of Medicine application constitutes grounds for disciplinary actions, including, but not limited to, expulsion or revocation of the acceptance.

Students in the School of Medicine agree to abide by the provision of an integrity code, which requires ethical and moral standards of conduct in all situations. Each student is required to return a signed statement to the Office of Student and Curricular Affairs, indicating the student has read and understands the student Professional and Academic Integrity Code of the West Virginia University School of Medicine. The code and copies of the statement are available in the Office of Student and Curricular Affairs in the School of Medicine.

Prior to matriculation, all students must complete certain prescribed immunization and diagnostic procedures.

## **Graduation Requirements**

### **Promotion Procedures (Evaluation of Student Progress)**

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the Committee, the student's overall performance does not meet the academic/professional standards of the School of Medicine.

No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

All courses and all classes at the School of Medicine are graded as Honors (H), Satisfactory (S), or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The H, S, and U designation is accompanied by a

narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

Readmission of a dismissed student is the prerogative of the Admissions Committee after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

All nondisciplinary matters are governed by the concept of academic due process.

Upon concurrent recommendation of the Admissions Committee, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession. In all other matters, due process principles shall apply. For further information the reader is referred to "The Policy on Academic Standards" governing the M.D. degree program at West Virginia University School of Medicine, which is available at the School of Medicine Office of Student and Curricular Affairs.

It is the policy of the School of Medicine that the departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. In addition to the departmental examinations, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion.

All students who have a health problem which they feel may be causing difficulty with their academic progress are strongly advised to notify the Associate Dean for Student and Curricular Affairs.

## **Grade Requirements**

A grade of Honors (H), Satisfactory (S), or Unsatisfactory (U) is recorded for each course. The grade of Incomplete (I) is given when the instructor believes that the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure (unsatisfactory) unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule). It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses. In addition, each department files in the Office of the Associate Dean for Student and Curricular Affairs a narrative evaluation of the work of each student.

## **Special Requirements**

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners (NBME) examination is one mechanism by which a license may be obtained. The examination is given in three separate parts. Part I is offered at

the end of the second year of medical school. The student is encouraged to take the Part I as a candidate for National Board certification at that time. Ordinarily, students should take Part II in September of their fourth year. Under special circumstances, third year students may take Part II in April of their third year even though they will not have completed all of their clinical clerkships. In the event that there is a question about when to take Part II, the student is advised to contact the Office of Student and Curricular Affairs in the School of Medicine. Part II of the NBME examination is required as a comprehensive test in clinical sciences and must be taken before graduation.

The overall performance of the student on the NBME examinations will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

### **Departure from Scheduled Work**

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Director of Admissions and Records, Health Sciences Center, for record. The Office of Student and Curricular Affairs in the School of Medicine must also be notified.

Interruption of academic work must be approved by the Office of Student and Curricular Affairs.

## **Curriculum**

The field of medicine is rapidly changing. The following curriculum outline is the plan that is presently in place. However, the medical school curriculum at West Virginia University will change as needs dictate.

### **First and Second Years**

The curriculum in medical school can be divided into two phases. The first two years are devoted largely to the basic sciences, including anatomy, biochemistry, physiology, microbiology, pathology, and pharmacology. There is an Introduction to Clinical Medicine course during the second year, as well as courses in Behavioral Science and Genetics. See the Medicine I and Medicine II charts for representative schedules.

### **Clinical Years**

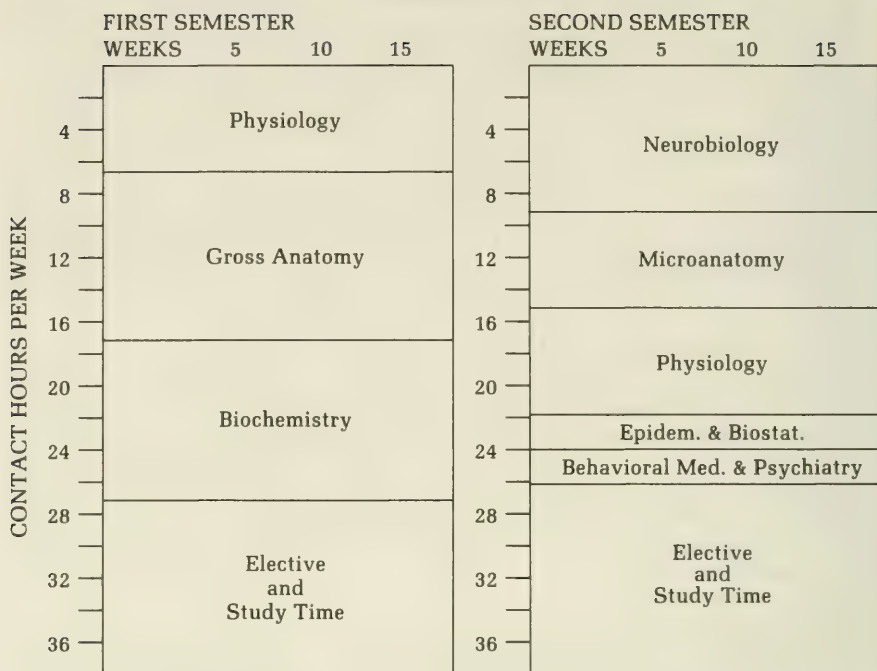
The last two years of study take place in the clinics and hospitals where students have the opportunity to help diagnose and treat patients under supervision of the full-time faculty and staff.

### **Third Year**

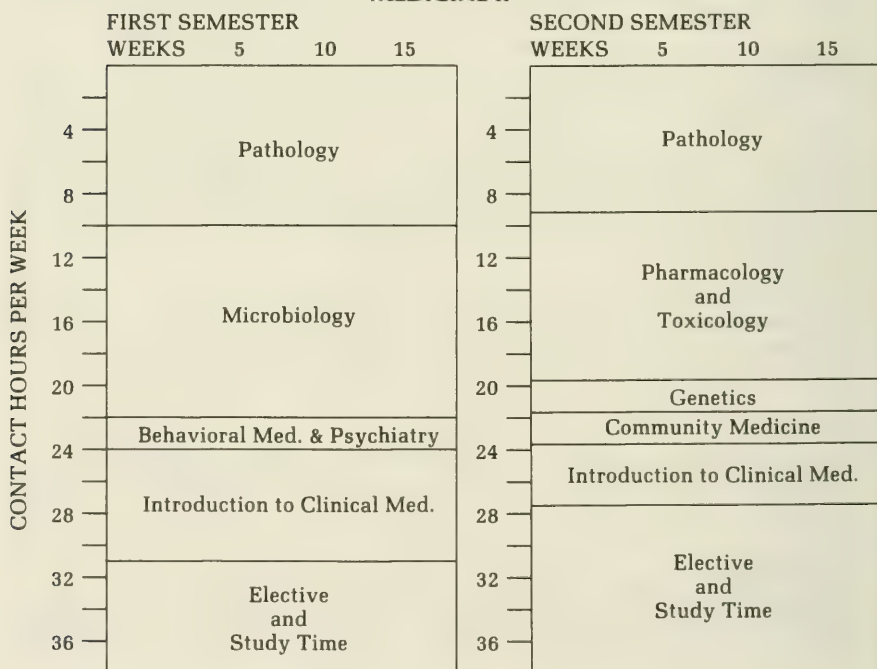
The third year is structured and the student must spend a designated period of time in each of the major clinical disciplines. This gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students are selected during their first year to spend the third and fourth year at the Charleston Division of WVU Health Sciences Center.

## MEDICINE I



## MEDICINE II



### MEDICINE III

#### Clerkships

#### WEEKS

12	Medicine
12	Surgery
12	Behavioral Medicine and Psychiatry
	Obstetrics and Gynecology
12	Pediatrics
	Neurology, Pediatrics OPD, Acute Medicine
48	TOTAL

elective. Each student works with an adviser to select the program best suited to his/her individual abilities and goals. The courses selected are subject to the approval of the Associate Dean in the Office of Student and Curricular Affairs. The majority of the students choose a broad selection of clinical rotations.

Twenty-four weeks of the fourth year must be spent in the intramural program of the Morgantown campus or the Charleston Division campus. The programs at the campuses are interchangeable. A *Catalog* is available from the Office of Student and Curricular Affairs that lists the approved intramural selections.

Students interested in other extramural opportunities are advised to consult with the fourth-year curriculum coordinator in the Office of Student and Curricular Affairs. Elective time must be spent in L.C.M.E. (Liaison Committee on Medical Education) or JCAH (Joint Council of American Hospitals) accredited institutions. Foreign rotations, regardless of sponsorship, are limited to four weeks credit.

Every fourth-year student has the opportunity for four weeks of vacation. The student may alternatively choose a clinical exercise for vacation time.

### Committees (Chairpersons)

Academic Standards: Gunter N. Franz.

Biomedical Research Support: Roy L. Butcher.

Dean's Committee to Clarksburg VA Hospital: James M. Stevenson.

Curriculum Committee: Richard M. Iammarino.

Executive Faculty: James M. Stevenson.

Educational Advisory: James M. Stevenson.

Faculty Promotion: Michael G. Mawhinney.

Medical School-Hospital Liaison to Student Body: James M. Stevenson.

Admissions Committee: David S. Hall.

E. J. Van Liere Student Research Convocation: Wilbert E. Gladfelter.  
Continuing Medical Education: John F. Brick.  
Admissions Committee for Medical Technology: Jean Holter.  
Admissions Committee for Physical Therapy: Marybeth Harris.

## Courses of Instruction

### Anesthesiology (Anes.)

Professors Eller (Chairperson), Heironimus, Martinez, Rodman, and Smith; Associate Professor Graf; Assistant Professors Bennett, Docherty, Heflin, Huber, Jopling, Lampkins, Stalenski, Weiss; Instructor Hackett; Clinical Professors Berkebile, Cwik, Irving, Lilly, Stullken, Weeks, and Zeedick; Clinical Associate Professors Bettinger, Hall, Jawalaker, Mantia, Rajaratnam, Swensen, Tercan, and Westmoreland; Clinical Assistant Professors Carter, Douglass, Dua, Gannon, Geronilla, Hovis, Huber, Kasraie, Kessel, Larkin, Mathew, Martin, Reedy, Saldanha, and Schienholtz; Clinical Instructors Chevuru, Delgra, Thompson, Trei, Valcarcel, and Walker.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)

331. *Clinical Clerkship in Anesthesiology/Acute Medicine. (Third Year.)* CR.

A. *Lectures to Third-Year Students on Topics Related to Anesthesiology.*

B. *Clinical Clerkship in Acute Medicine.* Preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology, toxicology, fluid and blood therapy, and pain management. Seminars and practical exercises in emergency cardiac life support clinical experience in ICU or OR. (Duration: 2 weeks.)

399. *Selective Experiences in Anesthesiology. (Fourth Year.)* CR. (See Conjoined Courses.)

### Behavioral Medicine and Psychiatry (B.M.P.)

Professors Azzaro, Flink, Kelley, Morgan, Morgan, Quarrick, and Stevenson (Chairperson); Associate Professors Bradlyn, Claude, Clausell, Cone, Desai, Ellis, Franzen, Kommor, Linton, Reamy, Robison, Seime, Smith, Tinnin, and Walker; Assistant Professors Bhanot, Byrne, Fuller, Harris, Keefover, King, McClung, Nickell, Payne, Pollard, Rankin, C. Sullivan, and Trumbull; Research Assistant Professor P. Sullivan; Adjunct Professor Levine; Adjunct Associate Professors Barnette and Elkins; Adjunct Assistant Professors Faris, Hamilton, Harms, and Stephen; Adjunct Instructor Kent; Clinical Professors Ayd, Bateman, Carter, Comer, Haynes, Marquis, Mortell, Rossman, Weise, Withersty, and Wurmser; Clinical Associate Professors Collins, Edelstein, Edwards, Faheem, Goodman, Greenwood, Ingersoll, Kerns, Knapp, Nahemow, Panepinto, Settle, Smith, Strokes, and Ward; Clinical Assistant Professors Allen, Almond, Brailor, Capage, Chambers, Davis, Dickey, Donovan, Dunning, Fawley, Fink, Frye, Guy, Hamilton, Hasan, Hill, Hutton, Kovacevich, Lavine, MacCallum, McCluskey, McNeer, Morgan, Naviaux, Neilan, Panepinto, Portz, Puzzuoli, Sine, Smith, Smith, Soule, Stein, Tellers, Webb, and Williams; Clinical Instructors Caruso, Fawley, Gantt, and Hunter.

311. *Introductory Psychiatry. (First Year.)* II. 2 hr. An examination of normal psychological development; consideration of the doctor-patient relationship and physician impairment. A preceptor model is used to introduce the patient to interviewing, emphasizing the mental status examination.

321. *Introductory Psychiatry. (Second Year.)* I. 2 hr. Continuation of B.M.P. 311 with an in-depth look at basic science and social science paramaters in psychiatry. Major clinical syndromes along with biological and environmental concomitants are presented. Advanced psychiatric interviewing is the focus of the preceptorship.

341. *Clinical Clerkship in Psychiatry. (Third Year.)* CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry, and participation and treatment of psychiatric disorders. Emergency Room responsibility.
399. *Selected Experiences in Behavioral Medicine and Psychiatry. (Fourth Year.)* (See Conjoined Courses.)

## Community Medicine (C. Med.)

Professors Pearson (Chairperson), Carlton, and Kotchen; Clinical Professor Heydinger; Adjunct Professor Graham; Associate Professors Hall, Smith (Emeritus), Wiles (Emeritus), and Wyant (Assistant Chairperson); Clinical Associate Professors Cooley, Greenwood, Rosenberg, and Schwerha; Adjunct Associate Professors Goodwin and Reger; Assistant Professor Garland; Clinical Assistant Professors Atkins, Avashia, Barry, Mukkamala, Scobbo, and Tablante; Adjunct Assistant Professors Amandus, Attfield, Gamble, Harper, Nottingham, Pollard, Smith, and Wright; Clinical Instructor Woodruff; Adjunct Instructors Dacey, Melton, Peterson, and Wilson.

311. *Methods of Biostatistics. I.* 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $\chi^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (Equiv. to Stat. 311.)
312. *Community Medicine. (Second Year.) II.* 2 hr. Open to limited number of graduate students. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental, and occupational factors. The organization of public health and medical care.
322. *Epidemiology and Biostatistics. (First Year.) II.* 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.
399. *Selected Experiences in Community Medicine. (Fourth Year.)* (See Conjoined Courses.)

## Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine. (Fourth Year.) I, II, S. CR.* PR: Satisfactory completion of the first three years of the medical curriculum. (Graded as H, S, or U.) The fourth year is elective and offers a wide range of opportunities. The student works with an adviser to select the individual program. This program must also be approved by the Associate Dean in the Office of Student and Curricular Affairs. The year is composed of eleven 4-week blocks. Twenty-four weeks of which must be spent in intramural programs on the Morgantown campus or at the Charleston Division—WVU Health Sciences Center. A *Catalog* is available that lists the specific guidelines for the fourth-year curriculum as well as approved intramural and in-state extramural electives.

## Family Medicine

Professors Traubert and Vazquez; Associate Professors Arbogast, Cleavenger, Lewis (Chairperson), Nath, Palmer, Ponte, and Swinker; Assistant Professors Dattola and Doyle; Clinical Professors Davis, Fullmer, Hall, Jarrett, Simmons, and Tully; Clinical Associate Professors Brooks, A. Cavender, J. Cavender, Eckert, Hess, Kellas, Mangus, Rashid, and Santrock; Clinical Assistant Professors Arthurs, Bergman, Byler, Clark, Crigger, Dickey, Elliott, Frey, Gais, Graham, Hayes, Hofreuter, Hopper, J. Kelley, Lewis, Lindsay, McNeill, Merrifield, Nau, Perrine, Reed, Ritz, Roberts, Saver, and Sine; Clinical Instructors Blum, Casto, Conley, Hanna, Harris, Hokanson, Stearns, Taylor, and Wack; Patient Educator Murray.

399. *Selected Experiences in Family Medicine. (Fourth Year.)* (See Conjoined Courses.)

## Medicine (Med.)

Professors Albrink, Battigelli, Bekheit, Chideckel, D'Alessandri, DiBartolomeo, Flink, Jain, Jones (Vice President, Health Sciences), Khakoo, J. M. Kotchen, T. A. Kotchen (Chairperson), Lapp, D. Z. Morgan, E. Morgan, Murgo, Ortel, Point, Raich, Riggs, Shultz, Stevenson, Ullrich, and Welton; Associate Professors Abrons, Banks, Chillag, Dedhia, Gaskins, Grubb, Hogan, Morise, Moss, Powers, Rogers, Stern, and Teba; Assistant Professors Antonelli, Auber, Borsch, Brick, deAndrade, Ferrari, Fisher, Funk, Jackson, Jordon, Kovach, Kujala, Kung, Layne, Liput, Neely, Nickell, Oliver, Rector, Schmidt, Seibert, Shamma'a; Research Assistant Professors Boegehold, Shumway and Sullivan; Instructors Blehschmidt, Blum, and Halbritter; Adjunct Associate Professors Castellan, Counts, Hodous, Pennock, Petsonk, and Yeater; Adjunct Assistant Professors Becker, Parker, and Rodriguez; Clinical Professors Emeriti Blatchley, Johnson, and Pushkin; Clinical Professors Artz, Avington, Carter, Gaziano, Jubeliner, Koppel, Latos, Lee, Lewis, Marshall, Pfister, Point, Reiter, Revercomb, Santer, Saville, Selinger, Skaggs, Valentine, Warren, and Zaldivar; Clinical Associate Professors Avashia, Byrd, Chvasta, Duncan, Gainer, Hall, Houston, Jackson, Jones, Kaplan, Koliner, Lamb, MacCallum, McCabe, McJunkin, Noble, Palmer, Parsons, Patel, Schwerha, Scobbo, Szego, Thakker, Thrush, Vasquez, and Warren; Clinical Assistant Professors Ahmad, Altmeyer, Beall, Burke, Chaddah, Chokkavelu, Crotty, Cunningham, Drews, Duffy, Ferguson, Harman, Harper, Hijab, Iyer, Jayakumar, Keegan, Kerns, Lee, Lewis, Liebeskind, Lilly, Lyons, Mansuri, Masilamani, Mazzocco, McCagh, Mehrotra, Milroy, Namay, Namay, Nseir, O'Keefe, Pierson, Rahman, Rajan, Roberts, Roidad, Romano, Scarr, Schaeffer, Schwartz, Shah, Shehl, Sikora, Stephens, Stone, Treharne, VanGilder, Vaughn, Wallia, and Wright; Clinical Instructors Abrahams, Bivens, Farooqi, Humphreys, Jimenez, Lim, Reynolds, and Skaff.

321. *Physical Diagnosis—Introduction to Medicine. I, II.* 5 hr. PR: Consent. Examination of normal subjects. Clinical concepts and practical experience in history taking and physical examination.
331. *Clinical Clerkship in Medicine. (Third Year.)* CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the departments. Clerkship in medicine occupies 12 weeks.
370. *Medical Genetics. II.* 2-4 hr. PR: Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as Gen. 370, Pedia. 370, CC MD 370.)
399. *Selected Experiences in Medicine. (Fourth Year.)* CR. (See Conjoined Courses.)

## Neurological Surgery

Professors Kaufman (Chairperson), Nugent, and Dunker.

399. *Selective Experiences in Neurological Surgery. (Fourth Year.)* (See Conjoined Courses.)

## Neurology (Neuro.)

Professors Azzaro, Bodensteiner, Gutmann (Chairperson), Martin, Riggs, and Schochet; Associate Professors Breen and Brick; Assistant Professors Gutierrez and Keefover; Clinical Professors Heck and Poffenbarger; Clinical Associate Professors

Crosby, Kettler, and Pratt; Clinical Assistant Professors Govindan, Grouse, Loudon, Morehead, Morgan, Stiller, Swisher, and Tellers.

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.

399. *Selected Experiences in Neurology. (Fourth Year.)* CR. (See Conjoined Courses.)

## **Obstetrics and Gynecology (Obst.)**

Professors Butcher, Cox (Chairperson), Glover, and Mairs; Professor Emeritus Fugo; Associate Professors Gordon, Reamy, and Toffle; Associate Professor Emeritus Foss; Assistant Professor Awadalla; Clinical Professors Behnam, Bonney, Chambers, Crites, Giles, Giustini, Maxson, Palladino, and Withersty; Clinical Associate Professors Arceo, Athari, Battaglini, Berry, Clark, Grubb, Keefer, Percy, Sandhu, Stone, Thomas, Wanger, and Williams; Clinical Assistant Professors Cunningham, Curnutte, Fulcher, Georgiev, Hitt, Hunter, Jones, Turner, and Van Riper; Clinical Instructors Bonasso, Busch, Bush, and Gyimesi.

341. *Clinical Clerkship in Obstetrics and Gynecology.* (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students participate in the care of all inpatients and attend all departmental clinics.

399. *Selected Experiences in Obstetrics and Gynecology. (Fourth Year.)* (See Conjoined Courses.)

## **Occupational Medicine**

Professor Battigelli (Chairperson).

399. *Selective Experiences in Occupational Medicine. (Fourth Year.)* (See Conjoined Courses.)

## **Ophthalmology (Ophthal.)**

Professors Weinstein (Chairperson) and Colasanti; Associate Professors Linberg, Odom, and Schwab; Assistant Professors Feghali, Jabbour, Nork, and Powell; Clinical Professors Blaydes, Magee, O'Connor, Ryan, Strickland, Trotter, and Winkler; Clinical Associate Professors Hamrick, Nugent, Raju, Shepherd, and Schwab; Clinical Assistant Professors Cassis, Fiery, Fogle, Genin, Pangilinan, Park, Rashid, Schieve, Strauch, Tarakji, Tipler, and Toma; Clinical Instructors Caudill, Francke, Glen, McClure, Minardi, and Schieb.

399. *Selected Experiences in Ophthalmology. (Fourth Year.)* (See Conjoined Courses.)

## **Orthopedic Surgery (Orth. Surg.)**

Professors Jones and Radin (Chairperson); Professor Emeritus Pickett; Associate Professors Blaha, Labosky, and Mayer; Clinical Associate Professor Bowers; Clinical Assistant Professors Kurth, Nelson, and Stoll.

399. *Selected Experiences in Orthopedic Surgery. (Fourth Year.)* (See Conjoined Courses.)

## **Otolaryngology (Otolaryn.)**

Professors Abbass, Lass, and Wetmore (Chairperson); Clinical Professors Bryant, Hall, Hatfield, Morgan, and Sprinkle; Associate Professors Haydon and Koike; Clinical Associate Professors Berryman, Bland, Cather, Haislip, Jaquiss, Kamerer, Lim, Malone,

Mathias, Oliverio, Paine, Snider, Spencer, Sporck, Tekieli-Koay, Whitaker, and Wilkinson; Assistant Professors Kovach and Young; Clinical Assistant Professors Azar, Dodd, Hoge, Hurley, Nichols, Seung, Smith, Wade, and Wallace; Clinical Instructors Crigger, Hively, and Laurent.

399. *Selected Experiences in Otolaryngology. (Fourth Year.)* (See Conjoined Courses.)

## **Pediatrics (Pedia.)**

Professors Bodensteiner, Mullett, Neal (Chairperson), Starling, and Vasquez; Associate Professors Balian-Hogan, Jones, McJunkin, Myerberg, Ritchey, and Smith; Assistant Professors Baker, Blum, Chiang, Eckerd, Ellington, Ferrari, Gay, Hummel, Johnson, Kerns, Polak, and Zaboy; Adjunct Professor Kelley; Adjunct Associate Professors Abrons, Dunker, Gustafson, Simons, and Woodrum; Adjunct Assistant Professors Hahon, Ritchie, Shumway, and Tarry; Research Associate Professors Desai, Connors, and Strasburger; Research Assistant Professor Shaver; Instructors Moore, Sutherland, and Zelinka; Clinical Professors Giles, Hayes, Jakubec, and Lewine; Clinical Associate Professors Ayoubi, Burech, Hoylman-Ayoubi, Kumar, Szego, Winterer, and Wolf; Clinical Assistant Professors Abella, Binder, Iskander, Jayaram, Morgan, Mossahebi, Phillips, Reddy, Rhee, Sikora, Staab, and Verma; Clinical Instructors Boss, Majunder, and Uy.

331. *Clinical Clerkship in Pediatrics. (Third Year.)* CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.

370. *Medical Genetics. II. 2-4 hr. PR:* Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as CC MD 370, Gen. 370, Med. 370.)

399. *Selected Experiences in Pediatrics. (Fourth Year.)* (See Conjoined Courses.)

## **Radiology (Radiol.)**

Professors Gabriele (Chairperson) and Frich; Associate Professors Conn, Douglass, Jain, Mace, Sinha, Slack, Wald, and Willard; Assistant Professors Cunningham, DiGioacchino, Higgins, and Smith; Instructor Dominic; Clinical Professors Artz, Castro, Hayes, Kennard, Leef, Sexton, Smith, and Wheatley; Clinical Associate Professors Barger, Barnett, Bishop, Briley, Cordell, Goodwin, Hogan, Marano, Reifsteck, Rogers, Tanguilig, Wilder, and Wolff; Clinical Assistant Professors Abdalla, Caple, Caruso, Cohn, Crossen, Downey, Duncan, Dwyer, Gogineni, T. Hayes, Hetzer, Kalinowski, Kim, King, Koh, Koppikar, Kunst, Leef, Levy, McJunkin, Noble, Patterson, Reddy, Rosenblatt, R. Smith, Sparks, Stupar, Wershba, Wymer, and Yost.

399. *Selected Experiences in Radiology. (Fourth Year.)* CR (See Conjoined Courses.)

## **Surgery (Surg.)**

Professors Boland, Cochran, Murray (Chairperson), Surmonte, and Warden; Clinical Professors Bradford (Emeritus), Charbonniez, Ghaphery, Gilmore (Emeritus), Glass, Gray, Hershey (Emeritus), James, Kappel, J. Khan, M. Khan, King, Kusminsky, Lawton, Leadbetter, Linger (Emeritus), McConnell, Mendoza, Trenton (Emeritus), and Walker; Associate Professors Covey, Gustafson, Hochberg, McDowell, Schiebel, Quinlan and Voss; Clinical Associate Professors AbuRahma, Boustany, Chang, Dickey, Figueroa, Fogarty, Foster, Griswold, Harrison (Emeritus), Kessel, Kite, Lee, Mahan, Mantz, Markey, Polack, Rahbar, Reed, Riggs, Sampath, Schaefer, Seidler, Shabb, Shackelford, Susan, Trammell, Valasquez, and Williamson; Assistant Professors Blum, Bonitatibus, Hill, Ramsey, Rector, Rose, Saxe, and Vaughan; Clinical Assistant Professors Alfred, Al-Hajj, Amores, Barcinas, Burke, Cafoncelli, Capito, Carrier, Cash, Cross, Fedder, Franco, Fuller, Grant, Hamrick, Heiskell, Isa, Johnson, Kalla, Khoury, Kim, Kress, McLellan, Mossallati, Porcaro, Rao, Rashid, Robinson, Sikora, Tiley,

Vaghei, Veach, Walmsley, and Wright; Instructors CruzaVala and Whiteman; Clinical Instructors Cowan, Edwards, Holland, Neri, Payne, Staggers, Strauch, and Tolliver.

341. *Clinical Clerkship in Surgery. (Third Year.)* CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of housestaff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.

399. *Selected Experiences in Surgery. (Fourth Year.)* (See Conjoined Courses.)

## **Urology (Urol.)**

Professors Kandzari, Lamm (Chairperson), and Milam; Assistant Professor Tarry; Clinical Professors McCuskey and Summers; Clinical Associate Professors Durig, Lane, Lindert, McCoy, Shanmugham, and Trapp; Clinical Assistant Professors Belis, Beneke, Celis, Cricco, Kassis, Mali, McKinney, Morabito, Naranjo, Palmer, Ravitz, Recht, Serrato, Shannon, and Stoughton; Clinical Instructors Farsaii, and Tierney.

399. *Selective Experiences in Urology. (Fourth Year.)* (See Conjoined Courses.)

# **Medical Technology Program**

Jean D. Holter, Director

## **Degrees Offered**

B.S., M.S. in Medical Technology

## **Introduction**

The WVU School of Medicine admitted the first medical technology students in the 1945-1946 academic year. In 1987 the program started a career ladder mechanism with Allegany Community College and Fairmont State College, a part-time curriculum and a refresher curriculum.

The primary aim of the undergraduate medical technology program is to provide a strong educational background in the clinical laboratory sciences.

The purposes are: (1) to provide a program that meets the academic standards of the Univesity; (2) to provide medical technologists for hospitals, public health, and research laboratories; (3) to prepare medical technologists for teaching and supervisory positions; and (4) to provide an educational background accepted for graduate work.

The primary purpose of the graduate program in medical technology is to prepare students as supervisors of hospital clinical laboratories, to teach a specific laboratory area, and to direct a medical technology program.

The medical technology program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association. The present accreditation, for five years, will be reviewed in 1990.

## **Admission Requirements**

### **Premedical Technology:**

Admission requirements for the first year (premedical technology) are the same as those for the College of Arts and Sciences.

## Medical Technology Program:

Admission to the medical technology program includes course requirements, grade-point average, a personal interview, and letters of recommendation.

The course requirements (prerequisites) are:

English: 6 hours of Composition and rhetoric  
(English 1 and English 2)

Biology: 8 hours of general biology  
(Biology 1, 2, 3 and 4)

Chemistry: 12 hours to include 8 hours of inorganic chemistry  
(Chemistry 15 and 16)  
4 hours of organic chemistry (Chemistry 131)\*

Physics: 8 hours of general physics  
(Physics 1 and 2)

Mathematics: 6 hours to include minimal requirements of college  
algebra and trigonometry  
(Math 3 and 4)

Liberal Studies Program: 21-24 hours of electives

12 hours each of Cluster A and Cluster B

\*Transfer students must complete an organic chemistry course(s) (8 hours) that includes aliphatic and aromatic compounds. The course must include a laboratory.

Applicants should have a minimum grade-point average of 2.5 (cumulative and science). Applicants may be admitted on probation if their grade-point average (cumulative or science) is less than 2.5. Applicants with less than a 2.0 grade-point average, either cumulative or science, will not be admitted. A grade-point average of 2.5 or above does not necessarily assure admission.

A personal interview with the Medical Technology Admission Committee is required.

Two letters of recommendation from instructors in physics, chemistry or biology are required.

Admission of international students is in compliance with West Virginia University regulations. At least one science course (chemistry, physics, or biology) must be completed at an institution of higher education in the United States.

## Application Procedure

Application forms for admission to the professional program are available after December 1 from the Office of the Assistant Director of Admissions and Records, West Virginia University Health Sciences Center, Morgantown, WV 26506. There is an application fee of \$10.00. The priority date for returning the application form is January 15. The deadline date is February 1 if the student expects to enter the program the next fall semester.

Students at West Virginia University or Potomac State College are not transferred automatically from the preprofessional course to the professional course. Students are selectively admitted to the program.

## Graduation Requirements

### Junior Year

A student must maintain a grade-point average of 2.0 for each semester to be advanced to the senior year. Any student having one F or more than 2 D's at the end of the junior year will be suspended from the program. The Junior Year

Academic Standards Committee must recommend any student for advancement to the senior year. A satisfactory grade-point average does not assure advancement.

Senior Year

A student must maintain a grade-point average of 2.0 for each semester of the senior year. Graduation requires satisfactory completion of all academic work. Graduation requires the recommendation of the faculty of the School of Medicine.

Faculty

Nancie Blehschmidt, B.S. (WVU), Instructor.  
Joyce Compton, M.S. (WVU), Adjunct Instructor.  
Barbara J. Gutman, M.Ed. (U. Pitt), Associate Professor.  
Marta J. Henderson, M.S. (WVU), Associate Professor.  
Jean D. Holter, Ed.D. (WVU), Professor.  
Dane W. Moore, Jr., M.S. (WVU), Professor.  
Judy Mull, M.S. (WVU), Adjunct Instructor.  
Nathaniel F. Rodman, M.D. (U. Penn), Professor.

Curriculum Plan

PREMEDICAL TECHNOLOGY

FIRST YEAR

First Semester	Hrs.	Second Semester	Hrs.
Chem. 15—Inorganic	4	Chem. 16—Inorganic	4
Elective*	3	Engl. 1—Comp. & Rhet.	3
Math. 3	3	Elective*	3
Biol. 1	4	Biol. 2	4
M. Tec. 1**	2		
	16		14

SECOND YEAR

First Semester	Hrs.	Second Semester	Hrs.
Math. 4	3	Chem. 131—Organic	4
Electives*	6	Electives*	6-9
Phys. 1	4	Phys. 2	4
Engl. 2—Comp. & Rhet.	3		
	16		14-17

\*Electives from Cluster A and Cluster B are to be selected to meet the Liberal Studies Program requirements.

\*\*M. Tec. 1 is not a required subject. It is highly recommended that all students take this course. M. Tec. 1 is offered each semester.

MEDICAL TECHNOLOGY

THIRD YEAR

(MEDICAL TECHNOLOGY 1)

First Semester	Hrs.	Second Semester	Hrs.
M. Tec. 100	4	Parasitol. 224	4
M. Tec. 202	2	M. Bio. 223	5
Bioch. 139	5	M. Tec. 101	4
Physi. 241	4	M. Tec. 210	1
Elective	3	M. Tec. 291	2
		M. Tec. 229	1
	18		17

## FOURTH YEAR

### (MEDICAL TECHNOLOGY II)

Students receive didactic and clinical instruction in the University Hospitals, Inc. laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. If the student has excessive absences during the senior year, competencies not completed must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	Hr.
M. Tec. 200—Orientation .....	No Credit
M. Tec. 220—Immunohematology and Blood Banking .....	2
M. Tec. 221—Immunohematology and Blood Banking Laboratory .....	5
M. Tec. 230—Clinical Chemistry .....	2
M. Tec. 231—Clinical Chemistry Laboratory .....	5
M. Tec. 240—Clinical Hematology .....	2
M. Tec. 241—Clinical Hematology Laboratory .....	5
M. Tec. 250—Clinical Microbiology .....	2
M. Tec. 251—Clinical Microbiology Laboratory .....	5
M. Tec. 260—Instrumentation .....	2
M. Tec. 265—Laboratory Management .....	2
M. Tec. 270—Clinical Microscopy .....	1
M. Tec. 271—Clinical Microscopy Laboratory .....	1
M. Tec. 275—Medical Relevance of Laboratory Analysis .....	1
M. Tec. 277—Principles of Staining .....	2
M. Tec. 280—Clinical Immunology .....	3
	<hr/> 40

## Medical Technology (M. Tec.)

### Undergraduate Courses

Professors Holter and Moore; Associate Professors Gutman and Henderson; Instructor Blehschmidt; Adjunct Instructors Compton and Mull.

1. *Orientation to Medical Technology*. I, II. 2 hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Pass-Fail grading only.)
100. *Medical Technology*. 4 hr. PR: Acceptance into the Medical Technology Program as a first-year student or consent by Director. Clinical laboratory procedures employed in patient diagnosis in the areas of blood coagulation, blood banking, hematology, and clinical microscopy.
101. *Medical Technology*. II. 4 hr. Continuation of M. Tec. 100.
200. *Orientation*. I, II, S. No credit. (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics. (Pass-Fail grading only.)
202. *Laboratory Math, Quality Control, Computers*. II. 2 hr. Lectures and practice sessions in laboratory mathematics, techniques, and calculations in quality control and an introduction to computers to include terminology and basic operation.
210. *Clinical Laboratory Mycology*. II. 1 hr. How to isolate and identify the more commonly encountered pathogenic fungi as well as those fungi frequently seen as laboratory contaminants. The course will include basic taxonomy, isolation procedures, and identifying characteristics.
220. *Immunohematology and Blood Banking*. I, II. 2 hr. Lectures on immunohematology and blood banking theory and practice.

221. *Immunohematology and Blood Banking Laboratory*. Arranged. 5 hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.
229. *Basic Clinical Chemistry*. II. 1 hr. PR: Students in Medical Technology Program. Basic clinical chemistry procedures and theory. 1 hr. lec.
230. *Clinical Chemistry*. I, II. 2 hr. Lectures on principles of clinical chemistry procedures; their clinical significance and implication in diagnosis.
231. *Clinical Chemistry Laboratory*. Arranged. 5 hr. Practice in the clinical chemistry laboratory.
240. *Clinical Hematology*. I, II. 2 hr. Lectures in hematologic theory and practice.
241. *Clinical Hematology Laboratory*. Arranged. 5 hr. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation and problem solving.
250. *Clinical Microbiology*. I, II. 2 hr. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.
251. *Clinical Microbiology Laboratory*. Arranged. 5 hr. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology and parasitology.
260. *Instrumentation*. I, II, S. 2 hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.
265. *Laboratory Management*. I, II. 2 hr. Laboratory organization, economics, ethics, and records.
270. *Clinical Microscopy*. I, II, S. 1 hr. PR: Senior standing in Medical Technology or consent. Lecture to cover the screening of body fluids (urine, gastric juices, etc.) for abnormalities and pregnancy testing.
271. *Clinical Microscopy Laboratory*. I, II, S. 1 hr. PR: Senior standing in Medical Technology, or consent. Laboratory practicum in urinalysis, gastric analysis, pregnancy tests, and other procedures.
275. *Medical Relevance of Laboratory Analysis*. 1 hr. PR: Senior status in Medical Technology. Case presentations of pathologic entities encountered in the clinical laboratory. (Pass/Fail grading.)
277. *Principles of Staining*. I, II, S. 2 hr. Principles, mechanisms, and methodologies of stains and dyes used in clinical laboratories including evaluation and troubleshooting.
280. *Clinical Immunology*. I, II, S. 3 hr. Lectures and laboratory practice in the principles of clinical immunology and their relationship to clinical laboratory technology.
291. *Research, Educational Methodology*. II. 2 hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

## **Graduate Program Admission**

Applicants must have a baccalaureate degree in medical technology or an allied health field from an accredited college or university, and must be a certified medical technologist with an acceptable certifying agency.

The area of concentration desired by the student is considered in the undergraduate record evaluation as follows:

Individuals who desire to do special study in clinical chemistry, hematology or immunohematology must have completed a minimum of 8 hours in physics, 3 hours in mathematics, and 12 hours in chemistry to include organic chemistry.

Individuals who desire to do special study in microbiology must have completed a minimum of 12 hours of chemistry including organic chemistry and 16 hours in the biological sciences.

A minimum of one year's experience in a clinical laboratory is required. Applicants must have a minimum undergraduate grade-point average of 2.5 (based on a 4 point scale). Results of the aptitude portion of the Graduate Record Examination must be presented. Two professional letters of recommendation are required.

### **Application Procedure**

A preliminary application is filed in the Medical Technology Program Office, along with two reference letters and the results of the aptitude portion of the Graduate Record Examination. These three items are reviewed, and if all prerequisites are met, the applicant must make formal application to West Virginia University. Once the formal application and grade transcript(s) are received, the file is reviewed by the Admission Committee. A personal interview is required before final admission to the program.

### **Graduation Requirements**

1. Satisfactory completion of all course work with a 3.0 GPA.
2. A problem study in the major/minor area.
3. Successful completion of a written comprehensive examination in major and minor interest areas.
4. Successful completion of an oral defense of the problem study.

### **Master of Science Degree in Medical Technology**

It is expected that the students who enter the graduate program in Medical Technology at West Virginia University will have a goal in mind and will have a special field of interest in medical technology. The course of study the student follows is tailored to the needs of the student as far as it is possible to do so. A minimum of 36 semester hours of credit, including a problem study, is required for the master of science degree in medical technology.

The student selects:

1. A major area of concentration from education, supervision, or administration.
2. A minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 15 semester hours of work from the following courses is selected, dependent upon the major area of concentration.

#### **Required:**

Educational Psychology 320.

*Introduction to Research.* Methods and techniques of research in education. Major emphasis on design, analysis, interpretations, and reporting of research ..... 3 hours

If the major area is **education**, the following courses are available:

Health Education 320—*Roles and Functions of Health Education* .. 3 hours  
Education Administration 320—*Personnel Administration* ..... 3 hours  
Education Administration 351—*Administrative Procedures in*

*Adult Education* ..... 3 hours  
Education Administration 462—*Higher Education Law* ..... 3 hours  
Education Administration 463—*Higher Education Finance* ..... 3 hours  
Education Foundations 320—*Philosophic Systems and Education* .. 3 hours

If the major area is **supervision** and/or **administration**, the following courses are available:

Education Administration 320—*Personnel Administration* ..... 3 hours  
Education Administration 462—*Higher Education Law* ..... 3 hours  
Education Administration 463—*Higher Education Finance* ..... 3 hours  
Public Administration 341—*Administrative Organization and*

*Management* ..... 3 hours  
Public Administration 344—*Public Personnel Administration* ..... 3 hours  
Public Administration 345—*Public Administration and*

*Policy Development* ..... 3 hours

Courses available for either major for additional credit are:

Educational Psychology 231—*Sampling Methods* ..... 3 hours  
Educational Psychology 260—*Media and Microcomputers in*

*Instruction* ..... 3 hours  
Educational Psychology 301—*Introductory Behavior Analysis* ..... 3 hours  
Educational Psychology 321—*Design of Experiments* ..... 3 hours  
Educational Psychology 343—*Statistical Analysis in Education* ... 3 hours  
Educational Psychology 364—*Precision Teaching* ..... 3 hours  
Educational Psychology 370—*Programmatic Research* ..... 3 hours  
Health Education 308—*Community Health: Death Education* ..... 3 hours  
Health Education 309—*Community Health: Drug Education* ..... 3 hours

Students may select courses in schools and colleges at West Virginia University other than the School of Medicine. Courses in management, economics, and education are available, as well as courses in the scientific disciplines of medical technology.

A course in statistical methods is strongly recommended. This may be Educational Psychology 311, Statistics 311, or Community Medicine 311.

All students must complete a minimum of 18 semester hours in a science related to medical technology including M. Tec. 30—Seminar (3 hours) and M. Tec. 497—Problem Study (6 hours).

All full-time students register for 1 hour each semester in Medical Technology 300. Seminars include laboratory management, education in medical technology, and timely topics. A minimum of 3 hours of seminars to include all three of the above topics is required.

All students are required to pursue study on a problem in their areas of concentration. This study is reported in a thesis-style manuscript. For this study and report, students register in M. Tec. 497.

The total number of hours in M. Tec. 497 is determined by the student's program adviser. As many as 9 semester hours in M. Tec. 497 may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will count toward the fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

At the discretion of the student's program adviser, other requirements in teaching, supervision, and administration may be necessary. The adviser works out with the student a plan of study for the student's entire graduate program. This plan is made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is filed in the Health Sciences Center Graduate Programs Office. The student's problem study committee is also formed at this time.

### **Graduate Faculty**

Jean D. Holter, Ed.D. (WVU), Professor.

Richard M. Iammarino, M.D. (Loyola U.), Professor.

Singanallur N. Jagannathan, Ph.D., (U. Bombay), Professor.

Henry F. Mengoli, Ph.D., (Cath. U. of Am.), Associate Professor.

Dane W. Moore, Jr., M.S. (WVU), Professor.

Nathaniel F. Rodman, M.D. (U. Penn), Professor.

### **Course Offerings**

300. *Seminar*. I, II, S. 1 hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of 3 semester hours to include all three topics is required of all graduate students in the medical technology program.
491. *Advanced Study*. I, II, S. 1-6 hr. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration.

This study is reported in a thesis-style manuscript. For this study and report, the student registers in M. Tec. 497. Total number of hours earned in M. Tec. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

## **Division of Physical Therapy**

S. L. Burkart, PT, Ph.D., Professor and Chairperson.

### **Degree Offered**

B.S. in Physical Therapy

### **Nature of Program**

The WVU Physical Therapy Program in the Division of Physical Therapy was established in 1970 under the auspices of the School of Medicine to help meet the need for physical therapists in West Virginia. The program is accredited by the American Physical Therapy Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation, and accepts one class each fall for the final two years of a baccalaureate degree program. Students admitted into the program complete four semesters of combined classroom, laboratory and clinical education in the Morgantown area plus at least 18 weeks of full-time supervised clinical practice in various

clinics in West Virginia and other states. A Bachelor of Science degree is awarded to those completing the program, and entitles the graduate to apply for examination for state licensure. A license to practice physical therapy is required by all states.

**Admission Requirements**

Recommended high school preparation for physical therapy includes courses in biology, chemistry, algebra, trigonometry, physics, and social sciences. Typing and familiarity with computers are advised for all students who plan to enter college.

Because individualized instruction in laboratories and clinics is an essential component of the program, enrollment must be limited; all students who wish to enter the program must apply for admission. Applicants must have completed or be enrolled in the courses listed below. These courses are available at most junior and senior colleges and usually require two years to complete. Students with degrees in other fields are welcome to apply, but must also complete these courses.

<i>Courses Required for Application</i>	<i>Sem. Hr.</i>	<i>WVU Courses</i>
<b>Pre-Physical Therapy Courses</b>		
Biology (with lab).....	8	Biol. 1, 2, 3 & 4
Human Anatomy .....	3	Biol. 61
Chemistry (one year, with lab).....	8	Chem. 15 & 16
Math. prerequisites for physics .....	0-6	Math. 3 & 4
Physics (one year, with lab) .....	8	Phys. 1 & 2
Introductory Psychology .....	3	Psych. 1
Developmental Psychology .....	3	Psych. 141
Statistics .....	3	Stat. 101
<b>WVU Liberal Studies Requirements</b>		
English Composition .....	6	Engl. 1 & 2
Cluster A courses* .....	12	
(Humanities and Fine Arts; courses in three disciplines, including two courses in one discipline)		
Cluster B courses* .....	6	
(Social and Behavioral Sciences; two courses in two different disciplines, neither of which is psychology)		

\*See Liberal Studies section of the catalog for specific courses acceptable in each Cluster. Three hours in either Cluster A or Cluster B courses must focus substantially on the study of a foreign or minority culture or on women and/or issues of gender.

The courses listed are minimum requirements for application. Other recommended courses are human anatomy and human nutrition. Students are encouraged to pursue studies in additional courses of interest. Students who wish to substitute a course for one of those listed should contact the Division for permission and provide a written description of the proposed substitute.

Applicants must have a minimum GPA of 2.75 in the pre-physical therapy courses with at least a grade of C in each course, and a minimum cumulative GPA of 2.6 in all college courses. All applicants must have completed the Allied Health Professions Admission Test, submit ACT or SAT scores, and submit two letters of recommendation from physical therapists (not relatives) with whom they have worked in clinical settings. Preference is given to West Virginia residents; non-residents who have attended a West Virginia college or university, or who have other ties to the state, may also be considered.

Application forms should be requested during the fall semester, one year before the student plans to enter the Program. Forms are available from the Office of Admissions and Records, WVU Health Sciences Center, Morgantown, WV 26506. All application materials must be received from the applicant no later than March 1. Qualified applicants are then interviewed by the Physical Therapy Admissions Committee, at which time each applicant also writes an essay on a given topic, and those considered to demonstrate the greatest potential for success are recommended for admission into the Program. A student who does not meet all application requirements, but who believes extenuating circumstances justify consideration, may petition the Committee for an interview.

## Graduation Requirements

Students admitted into the program must complete all required courses of each term with a grade of at least C or P in each, and must maintain a minimum GPA of 2.5 in the program. Any student who does not meet these requirements may be placed on probation, suspended, or dismissed from the Program. The Division of Physical Therapy reserves the right to suspend or dismiss any student who does not perform at an overall level considered satisfactory for patient care.

In the second semester of the Program (spring of the junior year), students participate in patient care activities for an average of four hours per week. In the senior year, clinical education averages eight hours each week. Students must be prepared to provide personal travel to physical therapy clinics in the Morgantown area during these semesters of the program, and to pay for travel, room, board and other expenses associated with at least 18 weeks of full-time clinical assignments outside of the area during the last summer.

## Curriculum

### JUNIOR YEAR

First Semester	Hrs.	Second Semester	Hrs.
Path. 128	2	Anat. 102	3
Anat. 101	4	Anat. 308	2
Physi. 241	4	Ph.Th. 110	3
Ph.Th. 111	4	Ph.Th. 112	3
Ph.Th. 117	1	Ph.Th. 114	3
Ph.Th. 120	3	Ph.Th. 116	1
		Ph.Th. 118	3
	18		18

### SENIOR YEAR

First Semester	Hrs.	Second Semester	Hrs.
Ph.Th. 271	4	Ph.Th. 270	4
Ph.Th. 273	4	Ph.Th. 272	2
Ph.Th. 275	3	Ph.Th. 274	3
Ph.Th. 277	2	Ph.Th. 276*	3
Ph.Th. 279	4	Ph.Th. 278	5
Ph.Th. 281	1	Ph.Th. 282	1
	18		18

### SUMMER I (Senior Year)

Hrs.	SUMMER II (Senior Year)	Hrs.
Ph.Th. 290	2	2

\*Not required.

## Courses of Instruction in Physical Therapy (Ph. Th.)

Professors Burkart (Chairperson) and Petronis; Adjunct Professor Nelson; Associate Professors Harris and Weaver; Adjunct Associate Professor Erchard; Assistant Professor Sorg; Adjunct Assistant Professor Nestor; Instructor Pertko.

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section of this catalog. Enrollment in Physical Therapy courses is limited to students admitted into the program.)

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal system including biomechanics, principles of movement, and analysis of muscle and joint action. Normal and pathological gait.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy. Theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Cardiopulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, and pathology for treatment of cardiopulmonary conditions. Laboratory in cardiopulmonary evaluation, cardiac and pulmonary rehabilitation procedures, and respiratory treatment techniques. Lectures and case presentations in appropriate medical and surgical conditions.
114. *Medicine and Neurology*. II. 3 hr. Lectures in medicine including dermatology, aging, neurology, pharmacology and vascular disorders.
116. *Clinical Education 1*. II. 1 hr. Students perform basic treatment procedures under the supervision of experienced therapists in various clinics. (Graded Pass-Fail only.)
117. *Seminar*. I. 1 hr. Investigation of selected problems and issues.
118. *Basic Therapeutic Exercise*. II. 3 hr. Theory and clinical application of evaluation techniques including goniometry and manual muscle testing. The physiological basis and therapeutic application of passive and active forms of exercise are also studied. Emphasis is on progressive resistive and flexibility exercises.
120. *Human Development*. I. 3 hr. Presents human development across the life span with a special emphasis on neuromotor development. Topics include genetics, embryology, infancy, childhood, adolescence, adulthood, aging, and death.
270. *Organization and Management*. II. 4 hr. Basic principles and philosophy of management and the organization with emphasis on interpersonal relationship within an organization, styles of tasks, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures (including high and low volt stimulation, nerve conduction studies, and the use of electrical stimulation for pain control) is provided.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. Lectures, laboratory practice, and case study presentations are utilized to study the principles and techniques for examining the treatment disorders of the neuromusculoskeletal systems. An indepth study of extremity joint mobilization techniques is also provided.

274. *Orthopedic Physical Therapy*. II. 3 hr. Continuation of Ph. Th. 273 format and is a continuation of that course. Evaluation and rehabilitation of mechanical disorders of the spine are emphasized together with physical therapy and orthopedic management of selected pediatric disorders.
275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Clinical Teaching*. I. 2 hr. Emphasis on the physical therapist fulfilling numerous teaching roles. Students develop skill and techniques in the facilitation of learning, objective writing, presenting information, A-V utilization, and development of evaluation tools for both clinical and didactic settings.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and fundamental anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education 2*. I. 1 hr. Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include basic testing and evaluation procedures. (*Graded Pass-Fail only.*)
282. *Clinical Education 3*. II. 1 hr. Supervised experience in more specialized procedures and testing techniques and patient program design. (*Graded Pass-Fail only.*)
290. *Clinical Education 4*. S. 1-12 hr. Three full-time summer affiliations of six to eight weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health. (*Graded Pass-Fail only.*)

# School of Nursing

Lorita D. Jenab, Dean and Interim Chairperson of the Graduate Unit

Jacqueline W. Riley, Assistant Dean

Gaynelle McKinney, Interim Chairperson, Senior Unit

Suzanne Gross, Chairperson, Junior Unit

Jacqueline Stemple, Chairperson, Sophomore Unit

Mary Jo Butler, Chairperson, Charleston Unit

## Degrees Offered

B.S., M.S. in Nursing

The School of Nursing is studying the feasibility of offering a doctoral program in the future.

## Introduction

Class and course requirements are flexible to accommodate the registered nurse who is a full-time worker and a part-time student. Both undergraduate and graduate programs are offered in multiple off-campus sites. The school gained national acclaim for the curriculum known as "the West Virginia plan" in the early sixties. This integrated curriculum design served as a prototype for many developing schools of nursing. The school celebrated its 25th anniversary in 1985.

The distinctive mission of West Virginia University School of Nursing is to serve as a center for nursing education, research, and practice/service. The philosophy, purposes and goals of the school are developed and implemented within the framework of this mission. The goals of the school, which flow from the mission of the school and of the university, guide the development of the undergraduate and graduate programs in nursing.

## Accreditation

The National League for Nursing is the recognized accrediting agency for accreditation of nursing programs. The baccalaureate program received initial accreditation with graduation of the first class in 1964. The master's program was initially accredited in 1981. Both programs are reviewed for continuing accreditation every eight years.

Further information about the undergraduate programs may be obtained by writing Chairperson, Sophomore Academic Unit, WVU School of Nursing, 3002 Health Sciences Center North, Morgantown, WV 26506; or Chairperson, Charleston Academic Unit, WVU School of Nursing, WVU Health Sciences Center Charleston Division, 3110 MacCorkle Avenue, SE, Charleston, WV 25304. Information about the graduate program is available from the Chairperson, Graduate Academic Unit, WVU School of Nursing, 3014 Health Sciences Center North, Morgantown, WV 26506.

## Undergraduate Program

The baccalaureate program (BSN) accommodates both high school or college students who aspire to a career in nursing and registered nurses (R.N.) who are licensed graduates of associate degree and diploma nursing programs and want to continue their career development.

Basic students may enroll on the Morgantown campus or at Glenville State College in the West Virginia University School of Nursing—Glenville

State College consortium program offered in conjunction with the Charleston campus. Nursing courses begin in the sophomore year and extend through the senior year.

Registered nurses can complete requirements for a baccalaureate degree in nursing on both the Morgantown and Charleston Health Sciences Center campuses and through extension at Beckley and Parkersburg. At the extension sites all required non-nursing courses are earned in institutions of higher learning in the respective locations. Credit may be earned by enrollment, College Entrance Examination Board Advanced Placement Program, and Advanced Standing Examination available in the particular institution. Nursing courses are offered at a rate of four to eleven credit hours a semester in Charleston and at extension sites, and are scheduled to provide opportunity for completion of degree requirements in two to three years.

Undergraduate education in nursing prepares graduates to begin professional nursing practice and provides a foundation for graduate education in nursing. Upon completion of the baccalaureate curriculum, the nurse can practice in a variety of settings and with clients of various developmental levels. The graduate uses process skills to maintain, restore, or improve health states of clients, and uses leadership theory to effect change. The baccalaureate graduate uses a conceptual base to evaluate and modify the nursing role in relationship to client needs and expectations, and is prepared to support efforts in expanding nursing knowledge.

## **Fees, Expenses, Housing, Transportation**

Registering students pay the fees shown in the *WVU Health Sciences Center Catalog* charts, plus special fees and deposits as required. Fees are subject to change without notice. Students' expenses vary widely according to course of study and individual tastes. Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Health Sciences North, Morgantown, WV 26506, telephone 304/293-3706.

The University Housing and Residence Life Office, G-18 Towers (phone 304/293-3621), provides information concerning University-owned housing. The Student Life Office in Moore Hall provides information concerning privately owned, off-campus housing, (phone 304/293-5611).

**Some clinical experiences require the student to travel in a multicounty area. Each student is responsible for providing her/his own transportation**

## **Admission Requirements—Basic Program**

Candidates for the basic program in nursing must have completed one year of prescribed courses in an accredited college or university to qualify for admission. The opportunity for direct admission as freshmen is available to selected students. The prescribed courses, illustrated in the suggested plan of progression of the first year, include: English composition, 3 hours; introductory sociology, 3 hours; introductory psychology, 3 hours; life span growth and development, 3 hours; chemistry, 8 hours; biology, 4 hours; nutrition, 3 hours; college algebra, 3 hours, or a Cluster A Liberal Studies course.

Applicants are eligible for review by the Admissions Committee after completion of one full semester of course work. The academic record is the major factor in the decision on admission. To qualify for consideration, a West

Virginia resident must have a grade-point average of 2.5 or above, on a scale of 0.0 to 4.0 on all college work attempted. Residents of other states must have an average of 3.2 or above to be considered. West Virginia residents whose grade-point average falls between 2.3 and 2.5 and out of state residents with a grade-point average between 3.0 and 3.2 may petition in writing to the Admissions Committee for special consideration. Such a petition, clearly stating why the applicant should receive special consideration, is submitted with the application.

Application to the basic program must be made by February 15 of the year the candidate wishes to be admitted. Application forms are distributed after December 1 by the Health Sciences Center Office of Admissions and Records. Completed applications and the required \$10.00 application fee, payable to West Virginia University, may be presented in person or mailed directly to the Assistant Director of Admissions and Records, WVU Health Sciences Center North, Morgantown, WV 26506. February 15 is the deadline for receipt of all application materials, including transcripts.

Application to the West Virginia University—Glenville State College consortium basic program follows the schedule described above. Application forms are available from the WVU Health Sciences Center Office of Admissions and Records, the Charleston Division of WVU Health Sciences Center, and Glenville State College. Completed applications for the consortium program and the required \$10.00 application fee, payable to West Virginia University are mailed directly to the Student Affairs Coordinator, Charleston Division, WVU Health Sciences Center, 3110 MacCorkle Avenue, SE, Charleston, WV 25304.

## **Admission Requirements— Transfer Students to Basic Program**

An applicant with nursing credit from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. Application should be initiated three months prior to the beginning of the semester in which the applicant wishes to begin nursing courses. Transcripts and other required materials must be received no later than two months before the start of the entering semester. Candidates apply to the Assistant Director of Admissions and Records, WVU Health Sciences Center North, Morgantown, WV 26506, requesting consideration for advanced placement as a transfer student.

## **Admission Requirements—Registered Nurse Program**

Registered Nurse applicants are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5 or better on all college work attempted are required to be eligible for consideration. Applicants whose grade-point average falls below 2.5 may petition to the Admissions Committee for special consideration.

Application forms for the Morgantown Campus may be obtained from the Assistant Director of Admissions and Records, WVU Health Sciences Center North, Morgantown, WV 26506. Application forms for the Charleston Division, Beckley and Parkersburg extension sites may be obtained from the

Student Affairs Coordinator, Charleston Division, WVU Health Sciences Center, 3110 MacCorkle Avenue, SE, Charleston, WV 25304.

## **Academic Standards and Graduation Requirements—Basic Program**

To be in good academic standing, students must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses. A student who is not in good academic standing must present to the advisor an acceptable plan for meeting these requirements. All such plans must be within the policies and standards set by the Academic Standards and Admissions Committee. The baccalaureate of science in nursing degree is conferred upon completion of 130-133 credit hours.

## **Curriculum**

The curriculum design for both undergraduate and graduate programs is derived from basic beliefs about the major concepts and from beliefs about learning and holism. In essence, a framework is initially provided to identify the core concepts and their relationships. This framework becomes the student's vehicle or mechanism through which added knowledge can be organized and synthesized, generating new ideas.

The usual curriculum progression for the basic student is presented in the suggested plan of progress.

For the registered nurse student, a minimum of 30 hours of general education courses that meet the University Liberal Studies Program and School of Nursing requirements should be completed before enrollment in the first nursing courses: Nursing 100, Basic Concepts in Professional Nursing; and Nursing 101, Transitional Practicum. It is recommended that the 30 hours be selected from the suggested freshman and sophomore courses listed in the "Suggested Plan of Progression" under the section on curriculum. Special attention should be given to the physical, biological, and psycho-social sciences. Completion of additional general education courses beyond the 30 hours is recommended if the R.N. student wishes to carry a part-time course load. The second semester of chemistry may be waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (Anatomy, Physiology, Microbiology, and Pharmacology).

All R.N. students are required to enroll in Nursing 100 and Nursing 101. The purpose of these courses is to facilitate transition into professional nursing. Special emphasis is placed on socialization into role and expectations of this role according to the School of Nursing's conceptual framework. West Virginia R.N. licensure is required for enrollment in Nursing 101 and subsequent clinical nursing courses.

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours. Graduates of diploma establish sophomore level credit in nursing by successful completion of a comprehensive lower-division challenge examination.

Upon successful completion of Nursing 100 and 101, establishment of sophomore nursing credit, and completion of the general education course requirements listed in the Suggested Plan of Progression for the first and second years of the program, the R.N. student is eligible for the Advanced Placement Experience (APE). APE is a conceptual approach to establishing

credit for Junior nursing courses. Students enroll in specified sections of all Junior level courses and engage in experiences that result in an individualized diagnostic analysis of learning and completion of prescribed learning to meet identified needs. The prescriptive component, usually completed within the semester of enrollment in APE, forms the basis for continued learning in senior courses. Difficulty with APE may require special work or enrollment in additional Sophomore or Junior courses.

Successful completion of APE and of the general education requirements is required to be eligible for matriculation in Senior level courses. All Senior nursing courses are taken by enrollment.

## **Graduate Program**

The School of Nursing offers a program of study leading to the Master of Science in Nursing (MSN) degree to prepare the professional nurse for the role of nurse clinician in the advanced practice of nursing in primary health care. The program, which is administered by the Graduate Academic Unit, is offered at the University main campus in Morgantown and at selected extension sites.

This non-traditional, integrated graduate program offers a curriculum which allows students to enroll on a part-time or full-time basis. Throughout the curriculum, students are guided in the processes of self-development aimed at pursuing excellence in scholarly and professional endeavors. The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, master's paper, thesis, and the opportunity to investigate an area of interest in advanced study.

The pattern and duration of the student's study plan is determined in consultation with a faculty advisor and is based upon the student's background and goals. The program can be completed in four semesters of full-time study at the Morgantown campus. The average full-time load is 9-12 credit hours per semester.

Graduate education in nursing prepares clinicians capable of leadership in developing and expanding nursing knowledge, skills, and practice competencies in light of societal needs. Preparation at the master's level provides the opportunity for the student to demonstrate self-direction and effective interactions with other health professionals in improving nursing practice and the health care delivery system. The master's graduate is able to provide quality health care in a variety of settings while clarifying and redefining nursing roles.

## **Admission Requirements—Masters Program**

Candidates for the master's program in nursing must meet the admission requirements for graduate education at West Virginia University and be graduates of a National League for Nursing (NLN) accredited baccalaureate program in nursing. Applicants with a baccalaureate degree from nursing programs without NLN accreditation are required to take the NLN Comprehensive Achievement Test for Baccalaureate Nursing Students, Form 3113. These students are considered on an individual basis.

Applicants must have completed an introductory course in statistics (3 credit hours) and present evidence of a current professional nursing license in at least one state. An interview with a Graduate Academic Unit faculty member and recommendations from the head of undergraduate nursing

program, employer, and a colleague are also required. A statement of personal philosophy of nursing and professional goals must accompany the application.

The purpose of the interview is to verify application materials, review admission criteria, identify deficiencies and transferrable credits, and, where possible, project a tentative plan of study. It is expected that the applicant will take an active role in the interview process to be informed about the basis of the admission criteria.

The application process must be completed by January 1 for summer enrollment, March 1 for fall enrollment, and August 1 for spring enrollment. Class sizes are limited based on available faculty resources and space.

Applicants need to complete the following steps in order to be considered for admission:

1. Complete two application forms as indicated and return to the appropriate offices to avoid unnecessary delay in the review process.
  - a. Application for Admission to Graduate Studies (available from Admissions and Records)—To be returned with a \$20.00 nonrefundable service fee to: Office of Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.
  - b. Application for Admission to the Master of Science in Nursing Program (available from Graduate Unit office)—To be returned to: Chairperson, Graduate Academic Unit, WVU School of Nursing, Morgantown, WV 26506.
2. Request an official transcript of records from each college or university attended. Transcripts and records should be sent directly to the WVU Office of Admissions and Records.
3. Send the three recommendations directly to the Chairperson of the School of Nursing Graduate Academic Unit.
4. Participate in an interview with a faculty member teaching in the graduate program.

The parameters used for review of applicants include: academic achievement, professional experience, career goals, and recommendations. Once admitted the student is assigned a faculty advisor who guides the student in curricular and academic matters. Enrollment in nursing courses is based on readiness and availability of space.

### **Graduation Requirements—Master's Program**

The Master of Science in Nursing degree is awarded upon completion of 42 semester credit hours, including 30 hours (master's paper option) to 33 hours (thesis option) in nursing and 9 hours of non-nursing electives. The required non-nursing electives are restricted to 3 hours in computer utilization and 6 hours of humanities and/or social sciences. Students opting for a master's paper must complete an additional 3 hours of electives by advisement. Students must complete a thesis (6 hours) or a master's paper (3 hours).

Achievement of an overall academic average of at least a B in all work completed in the master's program is required. A grade of C in two nursing courses will require a faculty review of the student's program progression. Credit hours for courses in which the grade is lower than a C will not count toward satisfying graduate degree requirements. Nursing courses must be taken for a letter grade; electives may be taken on a satisfactory/unsatisfactory (S/U) basis. Removal of all conditions, deficiencies, and incomplete grades must be accomplished prior to graduation.

## Curriculum Outline

Nursing Theory, Practice, and Research (30-33 hours)	Hr.
Nsg. 300—Advanced Nursing: Primary Health Care 1 .....	3
Nsg. 301—Advanced Nursing: Primary Health Care 2 .....	3
Nsg. 302—Advanced Nursing: Primary Health Care 3 .....	3
Nsg. 310—Advanced Nursing Practice 1 .....	3
Nsg. 311—Advanced Nursing Practice 2 .....	3
Nsg. 312—Advanced Nursing Practice 3 .....	3
Nsg. 370—Theories in Nursing .....	3
Nsg. 373—Research Process and Methods in Nursing .....	3
Nsg. 400—Advanced Nursing Practice 4 .....	3
Nsg. 497—Research (Master's Paper) .....	3
OR	
Nsg. 497—Reserch (Thesis) .....	6
	<hr/> 30-33
Electives (9-12 hours)	
Master's paper option:	
Electives (non-nursing) .....	9
Electives by Advisement .....	3
Thesis option:	
Electives (non-nursing) .....	9
	<hr/>
TOTAL	42

## The Philosophy of West Virginia University School of Nursing

"Nursing is an art and a science practiced by professionals in concert with individuals, families and communities for the purpose of promoting health. Nursing is a learned discipline whose perspective is the person-environment health process. The person is inseparable from the environment and interacts dynamically with the environment as a unified whole, thus maintaining integrity. This interaction enables the pursuit of choices and goals. Health is a process through which individuals, families, and communities maximize potential for living a self-determined life.

Health is promoted through the caring presence of the nurse in situations where capabilities are discovered, strengths are maximized, and development is nurtured. The caring presence is a relationship in which the nurse interacts with persons in the creative application of the discipline's art and science. Nurses collaborate with others to maximize resources for the benefit of the person.

The discipline of nursing is taught in an academic setting in which students must be educated to practice in a rapidly changing society. The knowledge base for nursing builds on content from the humanities and the sciences. Learning is a life long process which is enhanced in a climate of personal acceptance of the learner as an integrated being. Faculty and students share the responsibility for creating an atmosphere that fosters the development of intellectual curiosity, systematic inquiry, critical thinking, self direction, caring relationships, and a commitment to continued learning.

Nursing is accountable to society for ensuring that the public interest is protected and served. To promote the relevance of the discipline to societal needs, faculty contribute to the development and evaluation of the discipline

by engaging in creative endeavors that reflect a synthesis of teaching, practice, and research.

Undergraduate education in nursing prepares individuals capable of beginning professional nursing practice and provides a foundation for graduate education in nursing. Graduate education in nursing at the masters level prepares persons to engage in advanced nursing practice and provides a foundation for doctoral study in nursing."

## B.S.N. Suggested Plan of Progression

### FIRST YEAR

First Semester	Hrs.	Second Semester	Hrs.
Chem. 11	4	Chem. 12	4
Psych. 1	3	Engl. 1	3
Soc. & A. 1	3	Biol. 2	4
HN&F 71	3	Psych. 141	3
Cluster A or Math. 3	3	Cluster A or Math. 3	3
	16		17

### SECOND YEAR

First Semester	Hrs.	Second Semester	Hrs.
Nsg. 80	4	Nsg. 75	2
Nsg. 81	3	Nsg. 82	4
Anat. 101	4	Nsg. 83	3
M. Bio. 26	4	Phys. 141	4
Engl. 2	3	Pcol. 160	3
	18		16
Nsg. 100 (R.N.'s only)	4		
Nsg. 101 (R.N.'s only)	2		

### SUMMER BETWEEN SECOND AND THIRD YEAR

	Hrs.
Nsg. 180	3
Nsg. 181	3
(Basic Students Only)	6

### THIRD YEAR

First Semester	Hrs.	Second Semester	Hrs.
Nsg. 182	4	Nsg. 184	4
Nsg. 183	5	Nsg. 185	5
Nsg. 175 or Stat. 101	2-3	Nsg. 175 or Stat.	2-3
Cluster A/elective	3-6	Cluster A/elective	3-6
	14-18		14-18

(Advanced Placement Experience for Junior Level Nursing Courses  
available for the R.N.s) ..... 20 credit hours

### FOURTH YEAR\*

First Semester	Hrs.	Second Semester	Hrs.
Nsg. 270	2	Nsg. 275	2
Nsg. 284	3	Nsg. 282	2
Nsg. 280	3	Nsg. 283	3
Nsg. 281	2	Nsg. 285	4
Nsg. 286	4	Cluster A/electives	3-6
	17		14-17

\*The sequence of courses may vary from campus to campus.

## **Courses of Instruction in Nursing (Nsg.)**

### **(For Nursing Majors Only)**

75. *Issues of Nursing*. II. 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.
80. *Concepts of Nursing 1*. I. 4 hr. PR: Sophomore standing or consent. Conc.: Nsg. 81. Introduces concepts, principles, and theories of nursing practice in relation to health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum 1*. I. 3 hr. PR: Sophomore standing or consent. Conc.: Nsg. 80. Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families. (Graded as Pass-Fail.)
82. *Concepts of Nursing 2*. II. 4 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 83. Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.
83. *Practicum 2*. II. 3 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 82. Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families. (Graded as Pass-Fail.)
100. *Basic Concepts of Professional Nursing*. I. 4 hr. PR: West Virginia R.N. licensure or consent. Concepts and principles related to the professional nurse role. Focuses on the nurse role and role transition plus concepts in the School of Nursing curriculum.
101. *Transitional Practicum*. I. 2 hr. Conc.: Nsg. 100. Selected clinical experiences designed to help students identify strengths and remedy weaknesses in applying professional nursing concepts to client care. (Graded as Pass-Fail.)
175. *Issues of Nursing 2*. I, II. 2 hr. PR: Nsg. 75 or consent. Issues of nursing practice. Emphasizes related theories and research.
180. *Concepts of Nursing 3*. S. 3 hr. PR: Junior standing or consent. Conc.: Nsg. 181. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and moderate deviations from wellness. Builds on past intellectual and interpersonal arts and psychomotor skills.
181. *Practicum 3*. S. 3 hr. PR: Junior standing or consent. Conc.: Nsg. 180. Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and moderate deviations from wellness. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor skills. (Graded as Pass-Fail.)
182. *Concepts of Nursing 4*. I. 4 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 183. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness.
183. *Practicum 4*. I. 5 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 182. Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. (Graded as Pass-Fail.)
184. *Concepts of Nursing 5*. II. 4 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 185. Continuation of concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages.

185. *Practicum 5. II. 5 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 184.* Selected experiences for application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. Emphasizes nursing care problems of increased complexity. (*Graded as Pass-Fail.*)
270. *Introduction to Research. 2 hr. PR: Senior standing or consent, Stat. 101 or equivalent.* Theory, principles, and concepts of the research process with application to nursing practice. 2 hr. lec.
275. *Issues of Nursing 3. 2 hr. PR: Senior standing or consent.* Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.
280. *Concepts of Nursing 6. I, II. 3 hr. PR: Senior standing or consent.* Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.
281. *Practicum 6. I, II. 2 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 280.* Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills. (*Graded as Pass-Fail.*)
282. *Concepts of Nursing 7. I, II. 2 hr. PR: Senior standing or consent.* Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.
283. *Practicum 7. I, II. 3 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 282.* Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population. (*Graded as Pass-Fail.*)
284. *Concepts of Nursing 8. I. 3 hr. PR: Senior standing or consent.* Analysis and synthesis of nursing role. Emphasizes theories of leadership and change, and environmental factors affecting health care delivery.
285. *Practicum 8. I, II. 4 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 284.* Selected experiences in the practice of professional nursing in primary and secondary settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (*Graded as Pass-Fail.*)
286. *Practicum 9. I, II. 4 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 284.* Selected experiences in the practice of professional nursing in acute or critical-care settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (*Graded as Pass-Fail.*)
300. *Advanced Nursing: Primary Health Care 1. I. 3 hr. PR or Conc.: Nsg. 370.* Analysis and synthesis of concepts in nursing and related sciences relevant to the development of a conceptual framework for nursing of the individual system in primary health care.
301. *Advanced Nursing: Primary Health Care 2. II, 3 hr. PR: Nsg. 310.* Development of a conceptual model for nursing with emphasis on developing strategies to promote client health with the family system.
302. *Advanced Nursing: Primary Health Care 3. S. 3 hr. PR: Nsg. 311 or Conc.: Nsg. 373.* Further development and/or refinement of a conceptual model for nursing with specific emphasis on planned change strategies and how these strategies impact health in the community system.

310. *Advanced Nursing Practice 1. I.* 3 hr. Conc.: Nsg. 300. Advanced nursing practice focusing on applicability of concepts in students' developing conceptual framework with the individual system.
311. *Advanced Nursing Practice 2. II.* 3 hr. Conc.: Nsg. 301. Advanced nursing practice focusing on development and application of nursing strategies within the context of students' conceptual model with the family system.
312. *Advanced Nursing Practice 3. S.* 3 hr. Conc.: Nsg. 302. Advanced nursing practice focusing on application and testing of students' conceptual model through identification of a health problem and through implementation of a planned change strategy in a community system.
370. *Theories in Nursing. I.* 3 hr. PR: Graduate standing; consent. Introduction to the structure and function of extant theories in nursing as a basis for developing a conceptual framework for nursing.
373. *Research Process and Methods in Nursing. II.* 3 hr. PR: Nsg. 310, 370. Study of the research process and methods as related to a conceptual model of practice and research in nursing.
400. *Advanced Nursing Practice 4. I, II.* 3 hr. PR: Nursing 312. Synthesis of advanced nurse clinician role in health promotion with critical analysis of issues and trends in professional nursing and health care. Practicum and Seminar.
491. *Advanced Study. I, II, S.* 1-3 hr. PR: Graduate standing; consent. In-depth study of topics related to current issues in primary health care. Study may be independent or through specially scheduled seminars.
497. *Research. I, II, S.* 3 hr. PR: Nsg. 373; PR or Conc.: Nsg 312; consent. Refinement and implementation of research proposal to meet requirements for the master's thesis, or completion of the master's paper.

# School of Pharmacy

Sidney A. Rosenbluth, Dean

Frank D. O'Connell, Associate Dean

Arthur Poremba, Assistant Dean—Hospital Affairs

## Degrees Offered

M.S., Ph.D. in Pharmaceutical Sciences

B.S. in Pharmacy

## Introduction

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It became the College of Pharmacy in 1936 and the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program. The current pharmacy curriculum comprises three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

A primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy. To meet this objective, the curriculum provides the student with the scientific and technical knowledge and communication skills required to practice the profession and inculcates in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies and professional organizations. In addition, the pharmaceutical industry provides various opportunities in promotion, distribution, production, and research. Pharmacists are eligible for commissions in the armed forces and for positions with the U.S. Public Health Service. Pharmacists also may prepare for careers in teaching and research through graduate study.

WVU School of Pharmacy offers M.S. and Ph.D. programs in the Pharmaceutical Sciences. Students may specialize in pharmacy, pharmaceuticals, pharmacognosy, medicinal chemistry, pharmaceutical chemistry, biopharmaceutics/pharmacokinetics, pharmacology and behavioral and administrative pharmacy.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from the American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy, whose objective is to promote the interests of pharmaceutical education. All of the AACP member institutions must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be not less than 18 years of age and of good

moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this catalog and the *WVU Undergraduate Catalog*.

Students preparing for the study of pharmacy may satisfy the course work requirements for entrance into the School of Pharmacy by majoring in any arts and sciences subject and including in their course selections the following, or their equivalents:

Pre-Pharmacy Requirements	Sem. Hr. Credit	WVU Courses Meeting Requirements
English Composition .....	6	Engl. 1 & 2
College Algebra* .....	3	Math. 3
Trigonometry* .....	3	Math. 4
Principles of Economics .....	6	Econ. 54 & 55
General Biology .....	8	Biol. 1/3 & 2/4 or Biol. 15 & 16
General Chemistry .....	8	Chem. 15 & 16
Organic Chemistry .....	8	Chem. 133/135 & 134/136
Physics .....	8	Phys. 1 & 2
Electives** .....	18	
Total .....	68	

\*Pre-calculus (4 hr.), or Calculus (4 hr.) may be substituted for College Algebra and Trigonometry.

\*\*Electives must be designed to satisfy the University Liberal Studies Program requirements. (See "Regulations Affecting Degrees" for a listing of specific courses.) Cluster A—12 hr.; Cluster B—6 hr. in addition to Economics 54 and 55.

*Because limited openings are available, preference in admissions is given to qualified West Virginians, although outstanding nonresident applicants are considered. Careful consideration is given to those personal qualifications which bear upon the fitness of applicants for the study and practice of the profession of pharmacy.*

Admissions are competitive and are based on cumulative and science academic grade-point averages achieved in all prior college courses, recommendations describing academic performance, results of the Pharmacy College Admissions Test (PCAT), and a personal interview which may be required. A required course in which a grade of D was received must be repeated with a grade of C or better before acceptance can be granted by the School of Pharmacy Committee on Admissions.

Applicants should write to the Office of Admissions and Records, WVU Health Sciences Center, Morgantown, WV 26506, for official application

forms, which will be made available after January 1 of each year and which should be returned to that office by April 1 preceding the fall term (first semester) in which the student seeks enrollment. Formal applications received after the April 1 deadline will be considered only when vacancies exist. A \$10.00 application fee is required and must accompany the application.

Each applicant who is recommended for acceptance is expected to deposit \$50.00 before his/her name is entered upon the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

Before enrollment in the School of Pharmacy, all students must complete all immunizations and diagnostic procedures required by the West Virginia Board of Regents, West Virginia University, the West Virginia University Health Sciences Center, and/or the School of Pharmacy.

Complete information may be obtained from the Dean of the School of Pharmacy, Morgantown, WV 26506 or from the Office of Admissions and Records, WVU Health Sciences Center, Morgantown, WV 26506.

### **Pharmacy College Admission Test**

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy adviser, the School of Pharmacy, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 555 Academic Court, San Antonio, TX 78204.

### **Personal Interview**

The Committee on Admissions may require a personal interview with an applicant, as it deems appropriate. Interviews are held during February, March, and April at the WVU Health Sciences Center and are arranged, insofar as possible, to suit the convenience of the applicant. The general policy is that only applicants with a cumulative and science grade-point average of 2.5 or above are called for an interview. Applicants with a cumulative or science grade-point average below 2.5 are generally not considered for admission.

### **Recommendations on Academic Performance**

Three faculty recommendations are required, although more may be submitted. At least two of these recommendations must be provided by course instructors in any two of the three pre-pharmacy science areas: biology, chemistry, and physics. The third recommendation may be provided by a course instructor of the student's choice.

### **Admission to Advanced Standing**

If space is available, students from other accredited schools of pharmacy may be admitted, provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 grade-point average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses can not be transferred.

### **Student Status and Advancement**

A student's status is determined by the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of

the Dean. In the School of Pharmacy, all grades except W, WU, P, and X are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade or failure to attain a 2.0 average in any semester will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance, earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on Academic Standards for advancement to the third professional year. Any student on probation at the beginning of the second semester of the second professional year or any student who qualifies for probation at the end of that semester shall not be eligible for summer clerkships.

Any first-professional-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-professional-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended or dismissed from the School of Pharmacy.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 12 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

### **Special Requirements**

Students in the first professional year are required to obtain an Intern Certificate from the West Virginia Board of Pharmacy. Any hours worked before becoming a Registered Intern will not count toward the 1500 clock hours required by the Board of Pharmacy for licensure in West Virginia. The Intern Certificate must be maintained until completion of the internship.

During the first professional year, students will be informed of their assigned semester for the third professional year's required externship/clerkship program. Location and time of the rotations will be assigned during the first semester of the second year. Opportunity will be provided to state individual preference before assignments are made; however, the School of Pharmacy reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying externship/clerkship assignments. The class will be divided equally in thirds for the summer, fall, and spring terms.

### **Requirements for Degree**

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU

concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

## Course Changes

A student who wants to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission for such change from the Committee on Academic Standards.

## Curriculum

### SCHOOL OF PHARMACY CURRICULUM PLAN

#### First Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Bioch. 139—Gen. Biochem.	4	M. Bio. 220—Microbiology	4
Anat. 101—Hum. Anat.	3	Phar. 202—Concepts Pceut. 2	4
Physi. 241—Mech. Body Funct.	4	Phar. 207—Intro. to Drug Lit.	1
Phar. 200—Prep. Phar. Pract.	3	Phar. 228—Phar. Pract. Leg. Env.	4
Phar. 201—Concepts Pceut. 1	3	Phar. 241—Fund. Pathophys.	3
Phar. 227—Phar. Soc. Env.	2	Phar. 270—Fund. Med. Chem. 1	3
	19		19

#### Second Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Pcol. 243—Pharmacology	4	Phar. 205—Phar. Pract.	4
Phar. 203—Concepts Pceut. 3	4	Phar. 230—Prof. Asp. Phar.	3
Phar. 229—Man. Asp. Phar. Pract.	3	Phar. 243—Chem. Immu. Agts.	3
Phar. 245—Pharmacotherapeutics 1	3	Phar. 246—Pharmacotherapeutics 2	3
Phar. 271—Fund. Med. Chem. 2	2	Phar. 260—Princ. Med.	2
Electives	0-3	Electives	0-4
	16-19		15-19

#### Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250—Amb. Care Clerkship	4	Phar. 250, 251, 252, and 253	16
Phar. 251—Med. Team Clerkship	4	(See First Session)	
Phar. 252—Inst. Care Clerkship	4	or	
Phar. 253—Elect. Clerkship	4	Electives	
		or	
	16	Free Session	

or  
Free Session

<i>Third Session (Second Sem.)</i>	<i>Hr.</i>
Phar. 250, 251, 252, and 253	16
or	
Electives	
or	
Free Session	

Prior to graduation and following completion of the first professional year, each student enrolled in the School of Pharmacy must complete a minimum of 19 credit hours of electives as part of the pharmacy curriculum.

Of the 19 credit hours, a minimum of 10 credit hours must be electives offered in the School of Pharmacy. The remaining credit hours may be approved electives offered in other colleges and departments at WVU and includes all Honors courses offered at WVU. Elective course lists are posted in the School of Pharmacy and are available from the student's adviser. Under special circumstances (e.g., new courses, preparation for special post-baccalaureate programs, etc.) and only with the adviser's permission, the student may take a course which does not appear on either list of approved electives. Beyond the required 19 credit hours, the student may take any other electives. No course taken prior to admission into the School of Pharmacy may be used nor repeated to meet the elective requirements of the professional curriculum.

A student admitted into the School of Pharmacy with a previously earned baccalaureate degree may petition the Committee on Academic Standards to be relieved of a maximum of 9 credit hours of approved elective courses outside the School of Pharmacy. This petition is normally granted if the student is in good academic standing. The student petitions for this exemption during the preregistration period in the Spring Semester of the first year in pharmacy school with the exemption contingent upon the successful completion of both semesters of the first-year pharmacy curriculum. Once the exemption is granted after the first two semesters in good academic standing, it shall not be revoked except for just cause as deemed necessary by the Dean and/or faculty.

The University pass/fail policy will be followed. Only Pharmacy 289 (first offering up to 3 hours), approved electives in other colleges and departments at WVU, or additional free electives may be taken on a pass/fail basis. A student with at least a 2.0 grade-point average may elect to take up to a maximum of 4 credit hours each semester on a pass/fail grading basis.

## **Graduate Programs**

### **Pharmaceutical Sciences**

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

### **Admission Requirements**

Applicants for admission must satisfy the general requirements for admission as graduate students. The applicant must possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences in order to be admitted with regular student status. Applicants not meeting criteria for admission with regular student status will be considered for admission under alternate admission classifications as explained in Part 2 of the *WVU Graduate Catalog*. In addition, Graduate Record Examination (GRE) scores in the verbal, quantitative, and analytical portions of the examinations are required from all students except for applicants in the area of Behavioral and Administrative Pharmacy where test

scores on the Graduate Management Admissions Test (GMAT) are acceptable. TOEFL, or similar scores, are required of international students.

### **Academic Standards**

No credits are acceptable toward a graduate degree with a grade lower than a C.

The graduate student must have a cumulative grade-point average of at least 3.0 for all graduate courses to qualify for the degrees.

### **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceutical chemistry, pharmaceutics, biopharmaceutics/pharmacokinetics, and behavioral and administrative pharmacy.

#### **Requirements for Ph.D. Degree**

The student's first semester is usually occupied with course work while he or she is under the guidance of an assigned interim committee. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student, with committee advice, may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S., except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee, and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted to candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy, a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

### **Master of Science (M.S.)**

The same programmatic requirements for the first year of graduate study are required of the M.S. degree student as those described for the Ph.D. student.

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceutics, biopharmaceutics, and pharmacokinetics.

## Requirements for M.S. Degree

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.

Upon completion of the course work and research requirements and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

## Courses of Instruction in Pharmacy

Professors Brister, Jacknowitz, Lim, Ma, C. Malanga, O'Connell, Riley, and Rosenbluth; Professor Emeritus Wojcik; Associate Professors Abate, Brushwood, M. Davis, Glover, R. Griffith, Gwilt, Lively, and Ponte; Assistant Professors Chan, Elliott, Madhavan, Makela, Stout, and Wedin; Clinical Associate Professor Lowe; Clinical Assistant Professors Bartsch, Braun, Clark, Dorociak, Gijsbers, Kelly, Lorenzo, M. Malanga, Midcap, Mosti, Ott, Parker, Prettyman, Ross, Stevenson, and Swanke; Clinical Instructors Alderman, Alderson, Anderson, Anile, Bailey, Barrickman, Bovenizer, Brosh, Caplan, Carney, Carter, Chesley, Cole, Coleman, Corkrean, Crawford, Criss, R. Davis, T. Davis, Eddy, Foster, Frederick, Fruth, Fusco, Gastineau, G. Gill, Giuliani, J. Griffith, Griffiths, Gryskevich, Hammond, Henry, Hickman, Hockenberry, Holmes, Hunter, Jackson, Jarvis, Johnston, Jones, Judy, Knight, Knoop, Law, Lewis, Logan, Lusk, Martin, Maruish, McGraw, McIntire, McKeever, Menighan, Meredith, Miller, Morgan, Muha, Nottingham, Olness, Orlando, Ottmar, Ottoway, Patriarca, Pawlak, Pedley, Peggs, Phillips, Plummer, Plyburn, Raymond, Reed, Reynolds, Rider, Ridgway, Ringer, Ritchie, Robinette, Rokisky, Scrivo, Sebroski, Shallis, Slevin, Small, Stanley, R. Stout, Taylor, B. Thomas, J. Thomas, N. Thomas, Tonkovich, Toompas, Turner, Van Meter, Viola, Way, Weaver, Weekley, Wood, Yost, and Ziolkowski; Adjunct Professors Howard, Nematollahi, O'Donnell, and Shah; Adjunct Assistant Professors Khoury, Kirsch, Noonan, Poremba, Swisher, and Warner; Adjunct Instructors Dalton, Goto, Kibler, Krahulec, Schamroth, and Stone.

## Pharmacy (Phar.)

200. *Preparation for Pharmacy Practice*. I. 3 hr. PR: First-year standing in pharmacy or consent. Pharmaceutical calculations, dosage forms, dispensing techniques, and an overview of pharmacy practice and career opportunities.
201. *Concepts in Pharmaceutics 1*. I. 3 hr. PR: First-year standing in pharmacy or consent. Concepts of a pharmaceutical systems with emphasis on the physico-chemical principles in formulations and dosage forms, primarily solutions and their calculations.
202. *Concepts in Pharmaceutics 2*. II. 4 hr. PR: Phar. 201 or consent. Special dosage forms, quality control, drug analysis, design and manufacture of pharmaceutical formulations and their conformity with Food and Drug Administration (FDA) regulations, especially good manufacturing practices.
203. *Concepts in Pharmaceutics 3*. I. 4 hr. PR: Phar. 202 or consent. Fundamentals of biopharmaceutics are presented. The kinetic, therapeutic, and dosage formulation-related aspects of drug absorption and disposition are discussed. Laboratories emphasize theoretical and practical problems in pharmacokinetics and bioavailability.
205. *Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature*. II. 1 hr. PR: First-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.

211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. (Includes lab component.).
212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
213. *Industrial Pharmacy*. I. 4 hr. PR: Phar. 202. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experience in manufacturing and development techniques.
214. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
215. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in pharmacy or consent. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. PR: Phar. 229 or consent. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I, 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
233. *Current Developments in Pharmacy Practice*. II. 3 hr. PR: Third-professional-year standing, or second-professional-year by consent. Examines issues of current importance to contemporary pharmacy practice such as prepaid health insurance, peer standards review and organizations, degree and title granting, competency based relicensure and continuing education, and technicians' roles.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
243. *Chemotherapeutic and Immunobiologic Agents*. II. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.

245. *Pharmacotherapeutics 1*. I. 3 hr. PR: Second-year standing in pharmacy or consent. The application of pharmacodynamic, pharmacokinetic, and pharmaceutical principles in the treatment, diagnosis, and prevention of disease states.
246. *Pharmacotherapeutics 2*. II. 3 hr. PR: Phar. 245 or consent. A continuation of Phar. 245.
247. *Clinical Pharmacokinetics*. 3 hr. PR: Pharm. 203 or consent. The application of pharmacokinetic principles to the therapeutic management of disease states. Includes effects of altered physiological conditions and diseases on drug kinetics and dose individualization techniques for specific drugs. (3 hr. lec.)
249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Advanced Pharmacotherapeutics*. I. 3 hr. PR: Phar. 246 or equiv., and consent. The integration of pharmacological-therapeutic concepts in the study of treatment modalities and problems which may be encountered by the pharmacist in drug management of selected disease states.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
270. *Fundamentals of Medicinal Chemistry 1*. II. 3 hr. PR: First-year standing in pharmacy or consent. A relationship of the chemistry, structure, and physico-chemical properties of drugs to their pharmacodynamic effects. Major portion devoted to basic principles followed by discussion in pharmacological classes.
271. *Fundamentals of Medicinal Chemistry 2*. I. 2 hr. PR: Phar. 270. Continuation of Phar. 270.
272. *Pharmacochemical Concepts of Drug Design*. II. 3 hr. PR: Phar. 271 or consent. Selected concepts of chemical approaches to the study of pharmacological and toxicological actions of drugs and their application to drug design.
276. *Pharmaceutical Quality Control*. II. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present.
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies.

285. *Nuclear Pharmacy*. I. 3 hr. PR: Second-year standing in pharmacy or consent. Production and properties of radiation; detection of radiation; nuclear medicine instrumentation; the formulation, production, quality control, and use of radioactive materials and radiopharmaceuticals used in diagnosis and treatment.
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacology, pharmacognosy, or pharmacy administration.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
300. *Industrial Pharmacy*. I. 4 hr. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
315. *Physical Pharmacy*. I or II. 3 hr. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
370. *The Synthesis of Drugs*. I, II, S. 3 hr. PR: Chem. 332 and consent. A survey of the approaches employed in the synthesis of a variety of examples of pharmacologically useful agents. Emphasis is placed on retrosynthetic analysis of target molecules and the application of synthetic procedures to multi-step syntheses.
390. *Special Topics*. I, II, S. 1-4 hr.
391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. PR: Consent. A multidisciplinary weekly presentation and discussion of special topics and research in the pharmaceutical sciences. (Weekly attendance is required and grading is on an S/U basis only.)
396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
484. *Special Seminar*. I, II, S. 1-6 hr. For use by disciplines in the pharmaceutical sciences wishing to have graduate students and faculty participate in seminars and group discussions on specialized or technical topics at the advanced level.
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Graduate standing and consent. Supervised practices in college teaching of pharmacy.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Formal presentation by graduate students to assembled graduate faculty and students of research or special topics approved by adviser. Title to be presented at start of semester. Required at least once annually. (Grading is S/U.)
497. *Research*. I, II. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent.

### **Pharmaceutical Chemistry (Ph. Ch.)**

375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Ph. Ch. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.

### **Pharmaceutics (Pceut.)**

302. *Advanced Pharmaceutics*. I or II. 3 hr. Physicochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.

### **Pharmacognosy (Pcog.)**

340. *Organic Plant Constituents*. I or II. 3 hr. Occurrence, properties, biogenesis, etc., of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest.
341. *Isolation of Plant Constituents*. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents.

### **Pharmacy Administration (Phar. Ad.)**

320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.
323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries. Oligopolistic practices, mergers, combines, costs of research, and production.

# West Virginia University Hospitals

West Virginia University Hospitals has entered a new era with the opening of a new 376-bed teaching facility—Ruby Memorial. For more than 25 years, the hospital has provided the training ground for health care professionals and offered the best in patient care. The new building will further enhance its efforts toward those goals.

The new building houses Children's Hospital and the Jon Michael Moore Trauma Center. It features improved patient care facilities and amenities. The building was named in honor of Hazel Ruby McQuain and the late J. W. Ruby. Mrs. McQuain contributed \$8 million, the largest philanthropic gift in West Virginia history, for the new hospital. In addition to the main building, a new psychiatric hospital has been constructed and an ambulatory care building is being planned.

The hospital does not receive tax revenues. It is operated by a not-for-profit corporation formed in 1984 when the West Virginia Legislature divested the hospital from the state. That divestiture permitted the hospital corporation to move forward independently to construct the new building.

Patients come to the hospital and its clinics from all parts of West Virginia, with 40 of the state's 55 counties represented on a typical day. They find expertise, experience, and equipment not available in other areas of the state.

## Radiologic Technology

A two-year program for radiologic technologists is offered by the Department of Radiology at West Virginia University Hospitals. This course covers anatomy and physiology, radiologic physics and radiation biology, quality assurance, radiographic procedures, pathology, medical terminology, computer literacy, nursing procedures, and professional ethics. Subjects taken do not carry WVU credit, but provision to transfer course work under the Board of Regents Bachelor of Arts program may be pursued. Clinical education is acquired on assigned tours of duty under the tutelage of staff members and clinical instructors. The program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA).

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. All students are required to take the American College Testing Program (ACT) test and have the report of scores sent to WVU prior to the admission decision. SAT scores are not accepted.

Students provide their own lodging and meals. Those completing the program are awarded a certificate and are eligible to take the American Registry of Radiologic Technologists Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Education Programs, Department of Radiology, West Virginia University Hospitals, Morgantown, WV 26506. Application deadline is February 1.

## Dietetic Internship Program

The Dietetic Internship Program is offered by the Department of Nutrition and Dietetics of West Virginia University Hospitals. The internship is a 44-week generalist program providing learning experience in administrative and clinical dietetics, and is accredited by the American Dietetics Association.

Upon successful completion of the program, the intern is recommended for membership in the American Dietetic Association and is eligible to complete the national registration examination.

Admission requirements are: completed bachelor's or advanced degree from an accredited college or university with courses meeting ADA Plan IV program requirements in general dietetics and at least a 2.75 overall grade-point average with a 2.25 in science courses and 3.0 in food and nutrition courses. Applications should reach the Internship Director by February 20. Appointments will be made in April for entrance in September.

Appointments to the program will be based on personal goals and expectations as identified in the letter of application, evidence of scholastic performance, work experience, extracurricular activities, scholastic honors received, letters of reference, and telephone interview with the screening committee.

Communications should be addressed to:

Director of Dietetic Internship  
West Virginia University Hospitals  
Department of Nutrition and Dietetics  
Morgantown, WV 26506

# Faculty and Staff

## President's Cabinet

Neil S. Bucklew, Ph.D., President

Dianne Brown, Ph.D., Special Assistant to the President for Social Justice

Marion F. Dearnley, J.D., Associate Provost for Student Affairs

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Tom Gaziano, Student Body President

James K. Hackett, M.B.A., Associate Vice President for Finance and Administration, Health Sciences

Mary Jane Hitt, M.A., Special Assistant to the President

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Reita Marks, Ed.D., Faculty Representative

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Jon A. Reed, J.D., Executive Officer

James Robinson, Ex officio

John Signorelli, M.B.A., Associate Vice President for Finance

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## Health Sciences Center

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James K. Hackett, M.B.A., Associate Vice President for Health Sciences.

William O. McMillan, Jr., M.D., Associate Vice President, Charleston Division.

W. Robert Biddington, D.D.S., Dean, Dentistry.

Lorita D. Jenab, Ed.D., Dean, Nursing.

Sidney A. Rosenbluth, Ph.D., Dean, Pharmacy.

James M. Stevenson, M.D., Dean, Medicine.

Bernard G. Westfall, M.B.A., President, WVU Hospitals.

## School of Dentistry

John D. Adams, D.D.S. (U. Pitt), Professor Emeritus of Fixed Prosthodontics.

Camillo A. Alberico, D.D.S. (Marquette U.), Professor Emeritus of Endodontics.

Lester H. Bakos, D.D.S. (WVU), Associate Professor of Hospital Dentistry.

Arthur J. Beaumont, Jr., D.D.S. (WVU), Associate Professor of Prosthodontics.

William P. Bennett, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Operative Dentistry.

Henry J. Bianco, Jr., D.D.S. (U. Md.), Associate Dean; Professor and Chairperson of Prosthodontics.

W. Robert Biddington, D.D.S. (U. Md.), Dean; Professor of Endodontics.

Byron H. Black, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry, Charleston Division.

Jerry Bondurant, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Jerry E. Bouquot, D.D.S. (U. Minn.), Professor and Chairperson of Oral Pathology.

Dale C. Bowers, D.D.S. (Ohio St. U.), Professor of Oral Diagnosis and Radiology.

Kirkland Brace, D.D.S. (Georgetown U.), Clinical Instructor in Hospital Dentistry.

Regina R. Brannon, D.D.S. (WVU), Clinical Instructor in Pediatric Dentistry.

Robert Bridgeman, D.D.S., Clinical Associate Professor (part-time) of Operative Dentistry.

Stephen Broughton, D.D.S. (WVU), Clinical Assistant Professor of Community Dentistry.

Thomas C. Cady, LL.M. (U. Tex.), Lecturer (part-time) in Dental Jurisprudence.

Anthony L. Camele, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Prosthodontics.

John L. Campbell, D.D.S. (Ind. U.), Professor Emeritus of Oral and Maxillofacial Surgery.

John A. Capriolo, D.D.S. (U. Md.), Clinical Instructor of Hospital Dentistry.

John Carson, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Minter L. Chapman, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

James M. Christian, D.D.S. (Temple U.), Assistant Professor of Oral and Maxillofacial Surgery.

Wayne G. Christian, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry, Charleston Division.

Damon E. Coffman, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

Myles I. Cogan, D.D.S. (U. Tex.), Clinical Associate Professor of Hospital Dentistry.

Robert J. Conner, Jr., D.D.S. (WVU), Professor of Fixed Prosthodontics.

H. Lee Courtney, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

Richard J. Crout, D.M.D. (U. Pitt), Professor of Periodontics.

Donald Davidson, D.D.S. (U. Buffalo), Clinical Professor (part-time) of Oral and Maxillofacial Surgery.

Christina DeBiase, Ed.D. (WVU), Associate Professor of Dental Hygiene.

John Dempsey, D.D.S. (U. Md.), Clinical Associate Professor (part-time) of Orthodontics.

Kenneth H. Dolan, D.M.D. (U. Ky.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Stephen N. Doran, D.M.D. (S. Ill. U.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Lindsey R. Douglas, III, D.M.D. (U. Ky.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Paul E. Estep, D.D.S. (WVU), Assistant Professor of Dental Practice Management.

Peter H. Fagan, D.D.S. (Loyola U., Chicago), Clinical Instructor in Hospital Dentistry.

Edwin L. Farrar, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Sanford J. Fenton, D.D.S. (NYU), Professor of Pediatric Dentistry.

David C. Fogarty, D.D.S. (WVU), Clinical Associate Professor (part-time) of Oral and Maxillofacial Surgery.

James R. Foor, D.D.S. (WVU), Associate Professor of Operative Dentistry.

Pete G. Fotos, D.D.S. (WVU), Associate Professor of Oral Diagnosis and Radiology.

John W. Frye, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

Lewis Gilbert, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

Stephen C. Gladwin III, D.D.S. (Ohio St. U.), Associate Professor of Operative Dentistry.

Philip M. Goldstein, D.D.S. (U. Ky.), Clinical Associate Professor of Community Dentistry.

William L. Graham, D.D.S. (U. Md.), Associate Dean; Professor and Chairperson of Oral Diagnosis and Radiology.

Catherine E. Graves, M.A. (WVU), Associate Professor of Dental Hygiene.

Robert W. Graves, D.D.S. (WVU), Professor and Chairperson of Oral and Maxillofacial Surgery.

James A. Griffin, D.D.S. (Baylor U.), Professor of Endodontics.

Geoffrey A. Gwynn, D.D.S. (WVU), Clinical Associate Professor (part-time) of Pediatric Dentistry.

James D. Haddox, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

John B. Haley, Jr., D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Joseph D. Hancock, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

George W. Harper, D.D.S. (WVU), Associate Professor of Removable Prosthodontics.  
 Richard I. Hart, D.D.S. (U. Mich.), Associate Professor of Operative Dentistry.  
 David M. Hickman, D.D.S. (WVU), Associate Professor of Dental Practice Management.  
 Douglas E. Holmes, D.D.S. (U. Iowa), Clinical Assistant Professor of Pediatric Dentistry.  
 Robert H. Hornbrook, D.D.S. (WVU), Associate Professor of Periodontics.  
 Barbara Ingersoll, Ph.D. (Penn St. U.), Clinical Associate Professor of Community Dentistry.  
 Kent E. Jackfert, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry, Charleston Division.  
 C. Russell Jackson, D.D.S. (WVU), Associate Professor of Operative Dentistry.  
 S. N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Community Dentistry.  
 Winifield C. John, III, D.M.D. (U. Ky.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.  
 Richard C. Kelly, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.  
 Gordon G. Keyes, D.D.S. (U. Md.), Professor of Oral Pathology.  
 Darryl R. King, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.  
 Wendell C. Kitchen, D.D.S. (Ohio St. U.), Assistant Professor of Orthodontics.  
 Edwin V. Kluth, D.D.S. (Case West. Res. U.), Professor of Maxillofacial Prosthodontics.  
 Barbara K. Komives, M.S. (Ohio St. U.), Professor and Chairperson of Dental Hygiene.  
 Markus K. Koster, D.D.S. (WVU), Clinical Instructor (part-time) in Pediatric Dentistry.  
 Robert M. Kreig, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.  
 Marcia Krouse, M.S. (U. Ky.), Associate Professor of Dental Hygiene.  
 Lonnie Kuhn, D.D.S. (WVU), Clinical Assistant Professor of Community Dentistry.  
 John Kuyk, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.  
 Stephen J. Kwiatkowski, D.D.S. (WVU), Professor of Fixed Prosthodontics.  
 David A. Lattanzi, D.D.S. (Case West. Res. U.), Clinical Professor of Oral and Maxillofacial Surgery.  
 Claude R. Lee, D.M.D. (U. Ky.), Clinical Instructor in Hospital Dentistry.  
 Harry L. Legan, D.D.S. (U. Minn.), Professor and Chairperson of Orthodontics.  
 Jack Lindsay, D.D.S. (WVU), Clinical Instructor in Oral and Maxillofacial Surgery.  
 Clifford Linkous, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.  
 Raymond L. McCutcheon, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.  
 William R. McCutcheon, D.D.S. (WVU), Associate Dean; Professor and Chairperson of Community Dentistry.  
 William Marshall, D.D.S. (WVU), Assistant Professor of Hospital Dentistry.  
 Jack R. Martin, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) of Orthodontics.  
 Richard L. Meckstroth, D.D.S. (Loma Linda U., Calif.), Associate Professor of Community Dentistry.  
 H. Darrell Milem, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Periodontics.  
 Michelle Moreschi, D.D.S. (WVU), Clinical Instructor (part-time) in Endodontics.  
 Donald J. Morrison, D.D.S. (U. Iowa), Professor and Chairperson of Periodontics.  
 Andrea P. Mueller, B.S. (WVU), Clinical Instructor in Dental Hygiene.  
 Patricia Mullins, B.S. (West Liberty), Clinical Instructor in Dental Hygiene.  
 Robert L. Murphy, M.S. (Cath. U. Am.), Adjunct Associate Professor of Periodontics.  
 Gary G. Naylor, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

Franklin Oliverio, D.D.S. (U. Md.), Clinical Associate Professor (part-time) of Oral and Maxillofacial Surgery.

William M. Oscanyan, D.D.S. (WVU), Assistant Professor of Hospital Dentistry, Charleston Division.

James E. Overberger, D.D.S. (U. Pitt), Associate Dean; Professor of Dental Materials.

Dennis Overman, Ph.D. (U. Mich.), Clinical Associate Professor of Orthodontics.

James L. Payne, D.D.S. (U. Mo.), Clinical Instructor in Hospital Dentistry.

Mary R. Pfeifer, M.S. (Boston U.), Assistant Professor of Dental Hygiene.

Robert G. Pifer, D.D.S. (WVU), Professor of Oral Diagnosis and Radiology.

James B. Poindexter, Jr., D.D.S. (U. Penn), Clinical Professor of Oral and Maxillofacial Surgery.

Shelia S. Price, D.D.S. (WVU), Instructor in Prosthodontics.

David T. Puderbaugh, D.D.S. (WVU), Professor and Chairperson of Dental Practice Management.

William F. Queen, D.D.S. (WVU), Clinical Associate Professor of Prosthodontics.

Harold Reed, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Periodontics.

Vernon Rodeffer, D.D.S. (U. Md.), Associate Professor of Operative Dentistry.

William J. Rosenfeld, D.D.S. (SUNY), Clinical Assistant Professor of Periodontics.

Jack A. Roth, D.D.S. (U. Md.), Associate Professor of Removable Prosthodontics.

W. Dean Russell, D.D.S. (Emory U.), Clinical Assistant Professor of Hospital Dentistry.

Richard A. Salzer, D.M.D. (U. Penn), Clinical Assistant Professor of Hospital Dentistry.

Robert E. Sausen, D.D.S. (U. Minn.), Professor and Chairperson of Operative Dentistry.

Carol A. Sherrill, M.S. (U. Mich.), Associate Professor of Dental Hygiene.

Alex W. Skaff, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

A. E. Skidmore, D.D.S. (WVU), Professor and Chairperson of Endodontics.

Homer W. Smith, D.D.S. (WVU), Professor of Oral Diagnosis and Radiology.

Norton P. Smith, D.D.S. (WVU), Associate Professor of Fixed Prosthodontics.

Michael J. Sokolosky, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

Frank Stevens, D.D.S. (WVU), Associate Professor of Operative Dentistry.

John T. Stevens, D.D.S., Associate Professor of Operative Dentistry.

Charles J. Stewart, D.D.S. (WVU), Associate Professor of Prosthodontics.

Robert Stuchell, D.M.D., (U. Pitt), Associate Professor of Periodontics.

Lawrence E. Syner, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

Daniel R. Taylor, D.D.S. (WVU), Clinical Assistant Professor of Endodontics.

Nancy E. Taylor, D.D.S. (WVU), Clinical Assistant Professor of Community Dentistry.

Kay F. Thompson, D.D.S. (U. Pitt), Clinical Professor of Community Dentistry.

Harold E. Tucker, D.D.S. (Va. Cwealth U.), Professor of Fixed Prosthodontics.

James E. Valentine, D.D.S. (WVU), Clinical Associate Professor of Orthodontics.

Alan K. Vance, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Edmond G. VandenBosche, D.D.S. (U. Md.), Associate Professor of Operative Dentistry.

John Vargo, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

David H. Walker, D.D.S. (WVU), Professor of Dental Practice Management, Charleston Division.

Scott W. Wallace, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Robert L. Wanker, D.D.S. (WVU), Clinical Associate Professor (part-time) of Periodontics.

Amelia J. Weber, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Arnold L. Weese, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

John T. Welch, D.D.S. (U. Md.), Professor and Chairperson of Hospital Dentistry.

Stephen G. Wilbourn, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

John B. Wilfong, D.D.S. (Ohio St. U.), Clinical Associate Professor (part-time) of Orthodontics.

Thomas S. Wilkerson, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.  
 John A. Wilson, D.D.S. (Ohio St. U.), Clinical Associate Professor of Community Dentistry.  
 William M. Wine, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

## School of Medicine

Abdul Hay A. Abbass, M.D. (Damascus U.), Professor of Otolaryngology.  
 Henry L. Abrons, M.D. (Case West. Res. U.), Assistant Professor of Medicine (Pulmonary Medicine) and Pediatrics.  
 Thomas R. Adamski, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.  
 Margaret J. Albrink, M.D. (Yale U.), Professor of Medicine (Metabolism-Endocrinology).  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), Professor Emeritus of Pathology.  
 Leonardo Miquel Antaris, M.D. (U. Wisc.), Instructor in Ophthalmology.  
 Mary Ann Antonelli, M.D. (SUNY—Upstate Med. Cen.), Adjunct Assistant Professor of Medicine, Section of Rheumatology.  
 James G. Arbogast, M.D. (WVU), Associate Professor of Family Practice.  
 Harold G. Ashcraft, M.D. (WVU), Assistant Professor of Pathology.  
 Jeffrey V. Ashley, M.D. (WVU), Assistant Professor of Family Medicine, Charleston Division.  
 Miklos Auber, M.D. (Simmelweis Med. U.), Assistant Professor of Medicine  
 Sherif G. Awadalla, M.D. (U. Cincinnati), Assistant Professor of Obstetrics-Gynecology, Charleston Division.  
 Albert J. Azzaro, Ph.D. (WVU), Professor of Neurology, Pharmacology and Toxicology, and Behavioral Medicine and Psychiatry.  
 John Chris Baker, M.D. (WVU), Assistant Professor of Pediatrics.  
 Arpy Balian, M.D. (Aleppo U. Med.), Assistant Professor of Pediatrics (Pediatric Cardiology).  
 Daniel E. Banks, M.D. (Wayne State U.), Department Section Chief and Associate Professor of Medicine.  
 Mario C. Battigelli, M.D. (U. Florence), Director of the Institute of Occupational Health and Safety and Professor of Community Medicine  
 Christine Baylis, Ph.D. (Leeds U., Yorkshire, England), Associate Professor of Physiology.  
 Diana S. Beattie, Ph.D. (U. Pitt), Chairperson and Professor of Biochemistry.  
 Mark R. Bennett, M.D. (WVU), Assistant Professor of Anesthesiology.  
 William A. Beresford, Ph.D. (Oxford U.), Professor of Anatomy.  
 Richard A. Berg, Ph.D. (U. Houston), Associate Professor of Behavioral Medicine & Psychiatry, Charleston Division.  
 Mary J. Berry, M.S.W. (WVU), Instructor in Behavioral Medicine and Psychiatry.  
 Veena K. Bhanot, M.D. (Gov. Med. C., India), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 Dale L. Birkle, Ph.D. (U. Mich.), Assistant Professor of Pharmacology and Toxicology.  
 J. David Blaha, M.D. (U. Mich.), Associate Professor of Orthopedic Surgery.  
 James B. Blair, Ph.D. (U. Va.), Professor of Biochemistry.  
 Donald M. Blatchley, M.D. (Jeff. Med. C.), Clinical Professor Emeritus of Medicine (Dermatology).  
 Nancie A. Blechschmidt, B.S. (WVU), Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology.  
 Frederick C. Blum, M.D. (WVU), Assistant Professor of Surgery (Emergency Room).  
 John B. Bodensteiner, M.D. (U. Iowa), Professor of Neurology and Pediatrics.  
 James P. Boland, M.D. (Jeff. Med. C.), Professor, Assistant Chairperson and Chief of Surgery, Charleston Division.  
 Ernest J. Bonitatibus, M.D. (WVU), Assistant Professor of Surgery (Emergency Room).

Mark A. Borsch, M.D. (Ohio St. U.), Assistant Professor of Medicine (Cardiology).  
 Jerry E. Bouquot, D.D.S. (U. Minn.), Professor of Pathology.  
 K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), Clinical Associate Professor of Orthopedic Surgery.  
 Carole Brooks Boyd, M.D. (Wayne St. U.), Associate Professor of Pathology.  
 Robert D. Boyd, Ph.D. (WVU), Research Assistant Professor of Orthopedic Surgery.  
 Andrew S. Bradlyn, Ph.D. (U. Miss.), Associate Professor of Behavioral Medicine and Psychiatry.  
 Lenore A. Breen, M.D. (U. Tex., Med. Brch.), Associate Professor of Neurology.  
 James E. Brick, M.D. (WVU), Assistant Professor of Medicine (Rheumatology).  
 John F. Brick, M.D. (WVU), Assistant Professor of Neurology.  
 Kathleen P. Brooks, Ph.D. (U. Calif., Davis) Research Instructor in Biochemistry.  
 Paul B. Brown, Ph.D. (U. Chicago), Professor of Physiology.  
 Sandy L. Burkart, Ph.D. (WVU), Chairperson, Director, and Professor of Physical Therapy.  
 David B. Burr, Ph.D. (U. Colo.), Professor of Anatomy and Orthopedic Surgery.  
 Robert G. Burrell, Ph.D. (Ohio St. U.), Professor of Microbiology and Immunology.  
 Fred R. Butcher, Ph.D. (Ohio St. U.), Professor of Biochemistry; Associate Dean, School of Medicine (Research and Graduate Studies).  
 Roy L. Butcher, Ph.D. (Iowa St. U.), Professor of Obstetrics and Gynecology.  
 Marilyn H. Byrne, A.C.S.W. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.  
 William J. Canady, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.  
 Billy Ray Carlton, Ed.D. (U. Tenn.), Professor of Community Medicine.  
 Marshall J. Carper, M.D. (Med. C. Va.), Professor, Assistant Chairperson and Chair of Family Medicine, Charleston Division.  
 Bruce Caterson, Ph.D. (Monash U.), Professor of Biochemistry and Orthopedic Surgery.  
 William W. L. Chang, M.D. (Nat'l. Taiwan U.), Professor of Radiology.  
 Nyles Charon, Ph.D. (U. Minn.), Professor of Microbiology and Immunology.  
 Myra Lee Chiang, M.D. (U. East Philippines), Assistant Professor of Pediatrics, Charleston Division.  
 Elliott W. Chideckel, M.D. (U. Md.), Professor of Medicine (Metabolism-Endocrinology).  
 Shawn A. Chillag, M.D. (WVU), Associate Professor of Medicine, Charleston Division.  
 John P. Claude, M.S.W. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 Paul L. Clausell, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry.  
 Ronald L. Cleavenger, M.D. (WVU), Assistant Professor of Family Practice and Physician, University Health Service.  
 Holly A. Cloonan, Ph.D. (Purdue), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 Robert C. Cochran, M.D. (Boston U.), Professor of Surgery, Charleston Division.  
 Brenda K. Colasanti, Ph.D. (WVU), Professor of Ophthalmology and Pharmacology and Toxicology.  
 Arthur G. Conn, M.D. (Wayne St. U.), Assistant Professor of Radiology (Diagnostic).  
 John M. Connors, Ph.D. (U. Ill.), Research Associate Professor of Physiology.  
 Karen A. Connors, Ph.D. (Temple U.), Research Associate Professor of Pediatrics.  
 Linda L. Cook, M.D. (Ohio St. U.), Assistant Professor of Pathology.  
 Thomas H. Covey, Jr., M.D. (Harvard U.), Associate Professor of Surgery (Surgical Oncology).  
 Donald W. Cox, M.D. (Geo. Wash. U.), Chairperson and Professor of Obstetrics and Gynecology.  
 Charles R. Craig, Ph.D. (U. Wisc.), Professor of Pharmacology and Toxicology.  
 Jose Luis Cruzzavala, M.D. (Universidad Autonoma de Tamaulipas Tampico, Tamaulipas), Instructor in Surgery.

James L. Culberson, Ph.D. (Tulane U.), Acting Chairperson and Professor of Anatomy.

Michael E. Cunningham, M.D. (WVU), Assistant Professor of Radiology.

John C. Cwik, M.D. (Jeff. Med. C.), Clinical Professor of Anesthesiology.

Robert D'Alessandri, M.D. (N.Y. Med. C.), Dean, School of Medicine; Professor of Medicine and Section Chief of Comprehensive Medicine; Associate Dean for Ambulatory Care Services.

Rachel A. Dash, M.S.W. (U. Maryland), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Richard Dattola, M.D. (Temple U.), Assistant Professor of Family Practice.

Mary Elizabeth Davis, Ph.D. (Mich. St. U.), Associate Professor of Pharmacology and Toxicology.

Ronald DeAndrade, Jr., M.D. (Marshall U.), Assistant Professor of Medicine.

Harakh V. Dedhia, M.B.B.S. (Grant Med. C.), Associate Professor of Anesthesiology and Medicine (Critical Care).

Bharati S. Desai, M.B.B.S. (Baroda Med. C.), Adjunct Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics.

Richard D. Dey, Ph.D. (Mich. St. U.), Associate Professor of Anatomy.

Anthony DiBartolomeo, M.D. (WVU), Professor of Medicine; Section Chief of Rheumatology; Associate Dean of School of Medicine for Clinical Affairs; Medical Director of Ambulatory Care.

Thomas O. Dickey III, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Rocco J. DiGiacchino, M.D. (U. Bologna), Assistant Professor of Radiology.

Richard H. Docherty, M.D. (Godfrey Huggins Sch. of Med.), Assistant Professor of Anesthesiology.

Anthony J. Dominic, Jr., M.D. (Georgetown U.), Assistant Professor of Radiology.

Kenneth H. Douglass, Ph.D. (Carnegie-Mellon U.), Associate Professor of Radiology (Radiation Safety).

Gregory A. Doyle, M.D. (Med. College of Virginia), Assistant Professor of Family Medicine.

Ralph O. Dunker, Jr., M.D. (Ohio St. U.), Associate Professor of Neurological Surgery.

John P. Durham, Ph.D. (Ohio St. U.), Professor of Biochemistry.

John W. Durkin, Jr., M.D. (U. Vt.), Associate Professor of Obstetrics and Gynecology and Chief of Obstetrics and Gynecology, Wheeling Division.

John M. Eckerd, M.D. (Wake Forest), Associate Professor of Pediatrics, Charleston Division.

Peter R. Edelman, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Richard W. Eller, M.D. (Temple U.), Chairperson and Chairperson of Anesthesiology.

Beverly T. Ellington, M.D. (U. Ala.), Assistant Professor (SM) of Pediatrics.

Thomas E. Ellis, Psy.D. (Baylor U.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Marilyn I. Evans, Ph.D. (U. Wash.), Assistant Professor of Biochemistry.

William E. Evans, Jr., M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry.

Steven M. Faynor, Ph.D. (U. Wisc.), Assistant Professor of Pathology.

Joseph G. Feghali, M.D. (Am. U. Beirut), Assistant Professor of Ophthalmology.

David A. Felton, M.D. (U. Maryland), Instructor in Surgery.

Norman D. Ferrari III, M.D. (WVU), Assistant Professor of Pediatrics and Medicine (Comprehensive) and Physician in University Health Service.

Melanie A. Fisher, M.D. (Penn St. U.), Adjunct Assistant Professor of Medicine (Infectious Diseases).

William W. Fleming, Ph.D. (Princeton U.), Chairperson and Professor of Pharmacology and Toxicology.

Edmund B. Flink, M.D., Ph.D. (U. Minn.), Professor of Medicine (Metabolism and Endocrinology) and Behavioral Medicine and Psychiatry (Benedum Professor).

Gunter N. Franz, Ph.D. (U. Wash.), Associate Professor of Physiology.

Michael D. Franzen, Ph.D. (Sou. Ill. U.), Associate Professor of Behavioral Medicine and Psychiatry.

John C. Frich, Jr., M.D. (Geo. Wash. U.), Professor of Radiology and Section Chief of Radiation Therapy.

Morton H. Friedman, Ph.D. (U. Tenn.), Associate Professor of Anatomy.

James L. Frost, M.D. (Johns Hopkins U.), Professor of Pathology and Neurology and Medical Examiner.

Mark G. Fuller, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Medicine (Comprehensive Medicine).

Elizabeth A. Funk, M.D. (Ind. U.), Assistant Professor of Medicine (Infectious Diseases), Charleston Division.

Orlando Gabriele, M.D. (Yale U.), Chairperson and Professor of Radiology.

Barbara Garland, Ph.D. (U. N.C.), Assistant Professor of Community Medicine.

Ronald D. Gaskins, M.D. (Med. U. of SC), Professor of Medicine (Gastroenterology).

William Gay, M.D. (Eastern Va. Med. Sch.), Assistant Professor (SM) of Pediatrics.

Roger W. Geiss, M.D. (Cornell U.), Assistant Professor of Pathology.

Vincent F. Gerencser, Ph.D. (U. Ky.), Associate Professor of Microbiology and Immunology.

Wilbert E. Gladfelter, Ph.D. (U. Penn), Associate Professor of Physiology.

Douglas D. Glover, M.D. (Emory U.), Professor of Obstetrics and Gynecology.

Robert L. Goodman, M.D. (U. Pitt), Associate Professor of Physiology.

Howard R. Gordon, M.D. (U. Rochester), Associate Professor of Obstetrics and Gynecology, Charleston Division.

David F. Graf, M.D. (Albany Med. C.), Associate Professor of Anesthesiology.

Richard T. Gross, Ph.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Anesthesiology.

Stephen Grubb, M.D. (Med. C. Va.), Associate Professor of Medicine, Charleston Division.

Robert A. Gustafson, M.D. (WVU), Associate Professor of Surgery (Cardiothoracic Surgery).

Alvaro R. Gutierrez, M.D. (U. National Ncional Day, Rosaril Argentina), Assistant Professor of Neurology.

Barbara J. Gutman, M.Ed. (U. Pitt), Associate Professor of Medical Technology.

Ludwig Gutmann, M.D. (Columbia U.), Chairperson and Professor of Neurology; Professor of Physiology.

Elizabeth A. Elder Hackett, M.D. (Med. U. of SC), Instructor in Anesthesiology.

Kevin A. Halbritter, M.D. (WVU), Instructor in Medicine.

David S. Hall, Ph.D. (U. Ky.), Associate Professor of Community Medicine.

John E. Hall, Ph.D. (Purdue U.), Professor of Microbiology and Immunology.

Michael D. Hall, M.D. (WVU), Instructor in Surgery, Charleston Division.

William L. Hall, M.D. (WVU), Clinical Associate Professor of Medicine (Dermatology).

Carole V. Harris, M.A. (Hollins C.), Assistant Professor of Behavioral Medicine and Psychiatry.

Charles L. Harris, Ph.D. (U. Ill.), Professor of Biochemistry.

Marybeth Harris, M.S. (Med. C. Va.), Associate Professor of Physical Therapy.

Richard C. Haydon, M.D. (U. Va.), Acting Chairperson and Associate Professor of Otolaryngology.

George A. Hedge, Ph.D. (Stanford U.), Chairperson and Professor of Physiology (Van Liere Professor).

Robert E. Heflin, M.D. (WVU), Assistant Professor of Anesthesiology.

Marta J. Henderson, M.S. (WVU), Associate Professor of Medical Technology.

William L. Higgins, M.D. (U. Md.), Assistant Professor of Radiology (Diagnostic).

Ronald C. Hill, M.D. (WVU), Assistant Professor of Surgery (Cardiothoracic Surgery).

Rumy A. Hilloowala, Ph.D. (U. Ala.), Associate Professor of Anatomy.

Julio Hochberg, M.D. (Faculdade Catolica de Medicina de Porto Alegre RS, Brazil), Associate Professor of Surgery.

Tom F. Hogan, M.D. (Med. C. Va.), Associate Professor of Medicine (Hematology/Oncology).

Jean Holter, Ed.D. (WVU), Professor of Medical Technology.

William H. Houser, Ph.D. (Med. Col. of Virginia), Assistant Professor of Pharmacology and Toxicology.

Stanford Huber, M.D. (U. Maryland), Assistant Professor of Anesthesiology.

Linda Huffman, Ph.D. (U. Nebraska), Research Assistant Professor of Physiology.

Marybeth Hummel, M.D. (Ind. U.), Assistant Professor of Pediatrics.

Richard M. Iammarino, M.D. (Stritch Sch. Med.), Professor of Pathology; Section Chief of Clinical Pathology.

Nabil M. Jabbour, M.D. (Am. U. Beirut), Adjunct Assistant Professor of Ophthalmology.

Timothy K. Jackson, M.D. (U. Cincinnati), Assistant Professor of Medicine.

Singanallur N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Pathology and Biochemistry.

Abnash C. Jain, M.D. (Govt. Med. C., Patiala), Professor of Medicine; Section Chief of Cardiology.

Pushpa R. Jain, M.D. (Grant Med. C.), Associate Professor of Radiology (Radiation Therapy).

Shanker Japa, Ph.D. (Jawaharlal Nehru U.), Research Instructor in Biochemistry.

Chet D. Johnson, M.D. (U. Kans.), Assistant Professor (SM) of Pediatrics.

Michael D. Johnson, Ph.D. (U. Mich.), Associate Professor of Physiology.

Eric T. Jones, M.D. (U. Mich.), Associate Professor of Orthopedic Surgery.

John E. Jones, M.D. (U. Utah), Professor of Medicine (Metabolism and Endocrinology); Vice President for Health Sciences.

Michael W. Jopling, M.D. (WVU), Assistant Professor of Anesthesiology.

Kim Maria Jordan, M.D. (Marshall U.), Assistant Professor of Medicine.

Stanley J. Kandzari, M.D. (WVU), Professor of Urology.

Howard H. Kaufman, M.D. (Columbia U.), Chairperson and Professor of Neurological Surgery.

Robert W. Keefover, M.D. (Marshall U.), Assistant Professor of Behavioral Medicine and Psychiatry and Neurology.

John F. Kelley, M.D. (McGill U.), Professor of Behavioral Medicine and Psychiatry and Pediatrics.

William B. Kerns, M.D. (U. Maryland), Assistant Professor of Pediatrics.

Gordon Keyes, D.D.S. (U. Md.), Professor of Pathology.

Rashida A. Khakoo, M.D. (Makerere U.), Professor of Medicine and Section Chief of Infectious Diseases.

John H. King, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Ralph G. Kirk, Ph.D. (Yale U.), Professor of Anatomy.

Roselyn L. Kirkland, M.D. (Tulane), Assistant Professor of Anesthesiology.

Richard E. Kleinmann, M.D. (U. Penn), Associate Professor of Medicine, Charleston Division.

Rolf Kletzien, Ph.D. (U. Wisc.), Professor of Biochemistry.

Penrapa Satruee Klinkachorn, Ph.D. (WVU), Visiting Assistant Professor of Anatomy.

Kazunari J. M. Koike, Ph.D. (U. Tennessee), Associate Professor of Otolaryngology.

Martin J. Kommor, M.D. (U. S.C.), Associate Professor and Assistant Chairperson of Behavioral Medicine and Psychiatry; Chief, Charleston Division.

Jane M. Kotchen, M.D. (Case West. Res. U.), Professor of Medicine (Clinical Nutrition).

Theodore A. Kotchen, M.D. (Case West. Res. U.), Chairperson and Professor of Medicine.

Rodney F. Kovach, M.D. (WVU), Assistant Professor of Medicine (Dermatology) and Physician in University Health Service.

Gregory A. Kujala, M.D. (Thomas Jefferson U.), Assistant Professor of Medicine (Rheumatology).

Markus K. Kung, M.D. (U. Geneva), Assistant Professor of Medicine (Pulmonary Medicine).

Lloyd Kurth, D.O. (WV Sch. Osteo. Med.), Clinical Instructor in Orthopedic Surgery.

David A. Labosky, M.D. (U. Penn), Associate Professor of Orthopedic Surgery.

Donald L. Lamm, M.D. (UCLA), Chairperson and Professor of Urology.

Kenneth S. Landreth, Ph.D. (U. Wash.), Associate Professor of Microbiology and Immunology.

N. LeRoy Lapp, M.D. (Temple U.), Professor of Medicine (Pulmonary Medicine).

Richard D. Layne, M.D. (WVU), Assistant Professor of Medicine (Comprehensive Medicine).

Ping Lee, Ph.D. (Duke U.), Professor and Assistant Chairperson of Physiology.

Michael J. Lewis, M.D. (WVU), Chairperson and Associate Professor of Family Practice.

John V. Linberg, M.D. (NYU), Associate Professor of Ophthalmology.

John C. Linton, Ph.D. (Kent St. U.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Joseph H. Liput, Jr., M.D. (U. Pitt), Assistant Professor (SM) of Medicine (Nephrology).

Andrew H. Mace, Jr., M.D. (WVU), Assistant Professor of Radiology (Diagnostic).

Jamal Mahin, M.D. (Tehran Med. Sch.), Assistant Professor of Pathology (Clinical).

Daniel A. Mairs, M.D. (Duke U.), Professor, Assistant Chairperson and Chief of Charleston Division of Obstetrics-Gynecology.

James D. Martin, M.D. (Vanderbilt U.), Professor of Neurology.

Orestes A. Martinez, M.D. (Fac. Med. San Fernando), Professor of Anesthesiology.

Michael G. Mawhinney, Ph.D. (WVU), Professor of Urology and Pharmacology and Toxicology.

Philip J. Mayer, M.D. (U. Louisville), Associate Professor of Orthopedic Surgery.

Reginald J. McClung, M.D. (Marshall U.), Assistant Professor of Family Medicine, Charleston Division.

Tandy J. McClung, Ed.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Steven A. McCormick, M.D. (WVU), Assistant Professor of Pathology.

Donald E. McDowell, M.D. (Temple U.), Associate Professor of Surgery (Vascular Surgery).

Molly L. McFadden, Research Instructor in Medicine (Clinical Nutrition).

James E. McJunkin, M.D. (WVU), Associate Professor of Pediatrics, Charleston Division.

William O. McMillan, M.D. (Duke U.), Professor of Medicine (Gastroenterology) and Associate Vice President for Health Sciences, Charleston Division.

Catalino B. Mendoza, Jr., M.D. (Manila Central U.), Clinical Professor of Surgery (General Surgery).

Henry F. Mengoli, Ph.D. (Cath. U. Am.), Associate Professor of Microbiology and Immunology.

Dale R. Meyer, M.D. (U. Maryland), Instructor in Ophthalmology.

Mieczyslaw Michalkiewicz, Ph.D. (Warsaw Agricultural U., Poland), Visiting Scientist of Physiology.

D. Franklin Milam, M.D. (U. Penn), Professor of Urology.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), Associate Professor of Physiology.

Michael Miller, Ph.D. (Penn St. U.), Professor of Biochemistry.

Dane W. Moore, M.S. (WVU), Professor of Medical Technology.

Renee Saggio Moore, M.D. (WVU), Adjunct Instructor in Pediatrics.

David M. Morgan, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

David Z. Morgan, M.D. (Med. C. Va.), Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Medical Affairs).

Edwin J. Morgan, M.D. (U. Pitt), Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service.

Winfield S. Morgan, M.D. (Temple U.), Professor of Pathology.

Anthony P. Morise, Jr., M.D. (U. Vt.), Associate Professor of Medicine (Cardiology).

Alvin H. Moss, M.D. (U. Penn), Associate Professor of Medicine; Acting Section Chief of Nephrology.

Martha K. Mullett, M.D. (WVU), Associate Professor of Pediatrics.

Anthony J. Murgo, M.D. (SUNY—Downstate), Professor of Medicine (Hematology/Oncology).

Gordon F. Murray, M.D. (U. Mich.), Chairperson and Professor of Surgery; Section Chief of Cardiothoracic Surgery.

David Z. Myerberg, M.D. (Columbia C.), Associate Professor of Pediatrics.

Charlotte Nath, Ed.D. (WVU), Assistant Professor of Family Medicine.

William A. Neal, M.D. (WVU), Chairperson and Professor of Pediatrics.

Jeffrey L. Neely, M.D. (WVU), Assistant Professor of Medicine (Behavioral and Ambulatory Medicine); Physician in University Health Service; Program Director, Physician's Assistant Program.

Laura Jean Nelson, M.D. (U. Fla.), Adjunct Assistant Professor of Neurology.

Patton V. Nickell, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Medicine (Comprehensive Medicine).

William E. Noble, M.D. (U. Pitt), Clinical Associate Professor of Medicine, Wheeling Division.

T. Michael Nork, M.D. (U. Tex. Med. Sch., San Antonio), Assistant Professor (SM) of Ophthalmology.

Lamont D. Nottingham, Ed.D. (U. Va.), Adjunct Assistant Professor of Community Medicine, Charleston Division; Interim Research Associate of Community Medicine.

G. Robert Nugent, M.D. (U. Cincinnati), Professor of Neurological Surgery.

James V. Odom, Ph.D. (U. N.C.), Associate Professor of Ophthalmology.

Francis H. Oliver, D.O. (Phila. C. Osteopath. Med.), M.D. (WVU), Assistant Professor of Medicine (Cardiology).

R. Wade Ortel, M.D. (U. Md.), Professor of Medicine (Rheumatology) and Coordinator of Introduction to Clinical Medicine/Physical Diagnosis.

Dennis O. Overman, Ph.D. (U. Mich.), Associate Professor of Anatomy.

Jan E. Palmer, M.D. (SUNY), Associate Professor of Family Practice and Physician, University Health Service.

Janet Payne, A.C.S.W. (U. Tennessee), Assistant Professor of Behavioral Medicine and Psychiatry.

Richard J. Pearson, M.D. (Cambridge U.), Chairperson and Professor of Community Medicine; Professor of Family Practice.

Jane A. Pertko, P.T. (WVU), Instructor in Physical Therapy.

John J. Petronis, M.S. (WVU), Professor of Physical Therapy.

Mark L. Phillips, M.D. (Bowman Gray), Assistant Professor of Medicine (Rheumatology), Charleston Division.

Gary E. Pickard, Ph.D. (U. Wisc.), Assistant Professor of Anatomy.

Justus C. Pickett, M.D. (Case West. Res. U.), Professor Emeritus of Orthopedic Surgery.

Carlin A. Pinkstaff, Ph.D. (Emory U.), Professor of Anatomy.

W. Warren Point, M.D. (Harvard U.), Professor and Assistant Chairperson of Medicine; Chief of Medicine, Charleston Division; Associate Dean, School of Medicine, Charleston Division.

Mark J. Polak, M.D. (WVU), Assistant Professor of Pediatrics.

Scott E. Pollard, M.D. (U. Tex.), Assistant Professor of Behavioral Medicine and Psychiatry.

Charles D. Ponte, Pharm.D. (U. Utah), Associate Professor of Family Practice.

Robert Pope, Ph.D. (U. N. Dak.), Associate Professor of Anatomy.

Robert S. Pore, Ph.D. (UCLA), Professor of Microbiology and Immunology.

Stephen R. Powell, M.D. (WVU), Clinical Instructor of Ophthalmology.

Roxann L. Powers, M.D. (WVU), Associate Professor of Medicine (Comprehensive Medicine).

Eugene A. Quarrick, Ph.D. (Syracuse U.), Professor of Behavioral Medicine and Psychiatry.

Eric L. Radin, M.D. (Harvard U.), Chairperson and Professor of Orthopedic Surgery.

Gale W. Rafter, Ph.D. (U. Wash.), Professor of Biochemistry.

Peter C. Raich, M.D. (U. Wisc.), Professor of Medicine and Section Chief of Hematology/Oncology.

William D. Ramsey, M.D. (WVU), Assistant Professor of Surgery.

Eric D. Rankin, Ph.D. (U. Chicago), Assistant Professor of Behavioral Medicine and Psychiatry.

Kenneth J. Reamy, M.D. (Tufts U.), Associate Professor of Obstetrics and Gynecology and Behavioral Medicine and Psychiatry.

Mark J. Reasor, Ph.D. (Johns Hopkins U.), Professor of Pharmacology and Toxicology.

Stephen C. Rector, M.D. (U. Minn.), Assistant Professor of Surgery (Emergency Room) and Medicine (Comprehensive Medicine); Director, Emergency Room.

Frank D. Reilly, Ph.D. (U. Cincinnati), Professor of Anatomy.

Jack E. Riggs, M.D. (U. Rochester), Professor of Neurology and Medicine.

Orval E. Riggs, M.D. (U. Arkansas), Associate Professor of Surgery (Cardiothoracic Surgery).

A. Kim Ritchey, M.D. (U. Cincinnati), Associate Professor of Pediatrics.

Susan K. Ritchie, M.P.H. (U. N.C.), Research Assistant Professor of Pediatrics.

Nicolene L. Roberts, Assistant Professor (SM) of Behavioral Medicine and Psychiatry.

Joan Robison, Ph.D. (U. Ga.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Satyabhilashi P. Rochlani, M.B.B.S. (U. Madras), Associate Professor of Pathology.

Jeanne A. Rodman, M.D. (U. Iowa), Adjunct Professor of Anesthesiology.

Nathaniel F. Rodman, M.D. (U. Penn.), Chairperson and Professor of Pathology.

John S. Rogers, M.D. (Geo. Wash. U.), Associate Professor of Medicine (Hematology/Oncology).

William D. Rose, M.D. (WVU), Assistant Professor of Surgery, Emergency Room.

Geoffrey L. Ruben, M.D. (WVU), Instructor in Surgery.

Timothy G. Saxe, M.D. (WVU), Assistant Professor of Surgery (Emergency Medicine).

Franklin G. Schiebel, M.D. (U. Mex.), Associate Professor of Anesthesiology and Neurological Surgery.

Stanley B. Schmidt, M.D. (U. Va.), Assistant Professor of Medicine (Cardiology).

Sydney S. Schochet, Jr., M.D. (Tulane U.), Professor of Pathology, Neurology and Neurological Surgery.

Ivan R. Schwab, M.D. (WVU), Associate Professor of Ophthalmology.

Donald G. Seibert, M.D. (Geo. Wash. U.), Assistant Professor of Medicine (Gastroenterology).

Richard J. Seime, Ph.D. (U. Minn.), Associate Professor of Behavioral Medicine and Psychiatry.

John M. Shamma'a, M.D. (Emory U.), Assistant Professor of Medicine (Gastroenterology).

Thomas K. Shehan, D.V.M. (Ohio St. U.), Associate Professor of Pathology and Coordinator of Comparative Pathology (Animal Quarters).

James M. Sheil, Ph.D. (U. Ky.), Assistant Professor of Microbiology and Immunology.

Lauralee Sherwood, D.V.M. (Mich. St. U.), Associate Professor of Physiology.

Jeffrey S. Shultz, M.D. (WVU), Professor of Medicine and Chief of Medicine, Wheeling Division.

James M. Shumway, Jr., Ph.D. (U. N.C.), Research Assistant Professor of Pediatrics.

Purendra Sinha, M.B.B.S. (Patna Med. C.—India), Associate Professor of Radiology (Radiation Therapy).

Stephen T. Slack, Ph.D. (Penn St. U.), Associate Professor of Radiology and Section Chief of Radiation Safety.

David J. Smith, Ph.D. (WVU), Professor of Anesthesiology and Pharmacology and Toxicology.

Guy K. Smith, Ph.D. (Med. Col. of Va.), Assistant Professor of Radiology.

Richard D. Smith, M.D. (Georgetown U.), Associate Professor of Pediatrics.

Irvin S. Snyder, Ph.D. (U. Kans.), Chairperson and Professor of Microbiology and Immunology.

Paulinus J. Sorg, M.D. (Med. Col. of Va.), Assistant Professor of Physical Therapy.

J. Michael Sorrell, Ph.D. (Temple U.), Research Assistant Professor of Anatomy.

Robert C. Spain, M.D. (U. Colorado), Associate Professor of Medicine, Charleston Division.

Terence N. Spearman, Ph.D. (U. Manitoba), Research Assistant Professor of Biochemistry.

Sallie G. Sprague, Ph.D. (U. Mass.), Research Assistant Professor of Biochemistry.

Walter S. Stalenski, M.D. (Med. Col. Ohio), Assistant Professor of Anesthesiology.

Kenneth A. Starling, M.D. (Duke U.), Professor and Assistant Chairperson of Pediatrics, Charleston Division.

William T. Stauber, Ph.D. (Rutgers U.), Professor of Physiology and Neurology.

Richard M. Stenberg, Ph.D. (U. Penn), Assistant Professor of Microbiology and Immunology.

Arlene J. Stern, M.D. (Hahnemann Med. C.), Associate Professor of Medicine.

James M. Stevenson, M.D. (WVU), Chairperson and Professor of Behavioral Medicine and Psychiatry; Professor of Medicine and Section Chief of Behavioral and Ambulatory Medicine.

Robert E. Stitzel, Ph.D. (U. Minn.), Professor and Associate Chairperson of Pharmacology and Toxicology.

David A. Stoll, M.D. (U. Iowa), Clinical Assistant Professor of Orthopedic Surgery.

Richard J. Strasburger, Ed.D. (WVU), Research Associate Professor of Pediatrics.

Jeannine Strobl, Ph.D. (Geo. Wash. U.), Associate Professor of Pharmacology and Toxicology.

C. Rollyn Sullivan, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Pamela M. Sullivan, M.D. (WVU), Research Assistant Professor of Behavioral Medicine and Psychiatry.

John A. Surmonte, M.D. (Jeff. Med. C.), Clinical Professor of Surgery (General Surgery).

Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), Instructor in Pediatrics.

Shiro Suzuki, Ph.D. (National Kyusyu U.), Research Professor of Ophthalmology.

Ronald A. Swanson, M.D. (U. Minn.), Assistant Professor of Pathology (Clinical Pathology).

Marian L. Swinker, M.D. (Penn St. U.), Assistant Professor of Family Practice.

William F. Tarry, M.D. (M. S. Hershey Med. Sch.), Adjunct Assistant Professor of Urology and Pediatrics.

David A. Taylor, Ph.D. (WVU), Associate Professor of Pharmacology and Toxicology.

Luis Teba, M.D. (U. Granada Med. Sch.—Spain), Associate Professor of Anesthesiology.

Herbert Thompson, Ph.D. (U. Kans.), Associate Professor of Microbiology and Immunology.

Louis W. Tinnin, M.D. (U. Chicago), Associate Professor of Behavioral Medicine and Psychiatry.

Roger C. Toffle, M.D. (U. Minn.), Associate Professor of Obstetrics and Gynecology.

John W. Traubert, M.D. (Ohio St. U.), Professor of Family Practice and Associate Dean, School of Medicine (Student Affairs).

Dianne W. Trumbull, M.D. (U. N.C.), Adjunct Assistant Professor of Behavioral Medicine and Psychiatry.

George P. Tryfiates, Ph.D. (Rutgers U.), Professor of Biochemistry.

Irma H. Ullrich, M.D. (U. Minn.), Professor of Medicine (Metabolism-Endocrinology).

Knox Van Dyke, Ph.D. (St. Louis U.), Professor of Pharmacology and Toxicology.

John R. Vanin, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry; Physician, University Health Service.

Richard A. Vaughan, M.D. (WVU), Instructor in Surgery (Surgical Oncology).

Angel M. Vazquez, M.D. (U. P. Rico), Professor of Family Practice.

Kent E. Vrana, Ph.D. (LSU), Assistant Professor of Biochemistry.

Donald M. Wald, M.D. (U. Kansas), Associate Professor of Radiology and Section Chief of Diagnostic Radiology.

David K. Walker, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Elizabeth R. Walker, Ph.D. (WVU), Associate Professor of Anatomy.

Herbert E. Warden, M.D. (U. Chicago), Ph.D. (U. Ill.), Professor of Surgery (Cardiothoracic Surgery).

Carol J. Weaver, M.S. (U. Missouri, Kansas City), Associate Professor of Physical Therapy.

George W. Weinstein, M.D. (SUNY), Chairperson and Professor of Ophthalmology.

Juli S. Weiss, M.D. (Tulane U.), Assistant Professor of Anesthesiology.

William A. Welton, M.D. (U. Md.), Professor of Medicine and Section Chief of Dermatology.

Steven J. Wetmore, M.D. (U. Mich.), Chairperson and Professor of Otolaryngology.

Charles R. Whiteman II, M.D. (WVU), Instructor in Surgery.

Richard C. Wiggins, Ph.D. (Duke U.), Chairperson and Professor of Anatomy.

Deborah Willard, M.D. (WVU), Associate Professor of Radiology (Diagnostic).

Mary J. Wimmer, Ph.D. (U. N.C.), Associate Professor of Biochemistry.

George H. Wirtz, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.

Jennings F. Worley, Ph.D. (U. Maryland), Assistant Professor of Pharmacology and Toxicology.

William D. Wyant, M.S.E., M.P.A. (WVU), Associate Professor of Community Medicine.

David B. Yelton, Ph.D. (U. Mass.), Associate Professor of Microbiology and Immunology.

Stanley D. Yokota, Ph.D. (U. Calif.—Riverside), Assistant Professor of Physiology.

Stephen A. Young, Ph.D. (U. N. Mex.), Assistant Professor of Otolaryngology and Microbiology and Immunology.

Karen A. Zaboy, M.D. (Penn St.), Assistant Professor of Pediatrics.

Marijo Zelinka, M.D. (Jefferson Med. C.), Instructor in Pediatrics.

## School of Nursing

Elizabeth Barker, R.N., M.S.N. (U. R.I.), Visiting, Assistant Professor, Charleston Unit.

Gloria Barrett, R.N., M.S. (Tex. Wom. U.), Visiting Instructor.

Deborah Boyce, R.N., M.S.N. (WVU), Visiting Instructor.

Mary Ann Bundy, R.N., M.S.N. (WVU), Lecturer.

Margaret Anne Burkhardt, R.N., M.S.N. (U. Rochester), Visiting Assistant Professor, Charleston Unit.

Mary Jo Butler, R.N., M.S. (U. Md.), Associate Professor; Chairperson, Charleston Unit.

Victoria Casey, R.N., B.S.N. (WVU), Visiting Instructor, Charleston Unit.

Caroline Charonko, R.N., M.S.N. (WVU), Lecturer, Charleston Unit.

Doris K. Clearage, R.N., Ed.D. (WVU), Assistant Professor.

Linda Coffman, R.N., M.S. (U. Md.), Lecturer.

Linda Cooper, R.N., M.S.N. (WVU), Lecturer, Charleston Unit.

Mona M. Counts, R.N., Ph.D. (U. Tex.), Professor.

Patricia A. Diehl, R.N., M.A. (WVU), Associate Professor.

Pamela Deiriggi, R.N., Ph.D. (U. Tex.), Assistant Professor.

Susan Ellis-Hermansen, R.N.C., M.S. (Penn St. U.), Visiting Instructor.

Imogene P. Foster, R.N., M.A., M.S.N., (WVU), Assistant Professor.

Suzanne W. Gross, R.N., M.N.Ed. (U. Pitt), Assistant Professor; Chairperson, Junior Unit.

Debra L. Harr, R.N., Ed.D. (WVU), Assistant Professor.  
 Patricia Hiser, R.N., M.S. (Russell Sage), Instructor.  
 Jean Hoff, R.N., M.P.H. (U. Pitt), Visiting Associate Professor.  
 Lorita D. Jenab, R.N., Ed.D. (Columbia U.), Professor and Dean.  
 Dorothy M. B. Johnson, R.N., Ed.D. (WVU), Assistant Professor.  
 Patricia Johnston, R.N., M.S.N. (Ohio St. U.), Lecturer, Charleston Division.  
 Judith C. Kandzari, R.N., M.S.N. (WVU), Associate Professor.  
 Beverly Knicely, R.N., M.S.N. (WVU), Visiting Instructor.  
 Nancy A. Koontz, R.N., M.S.N. (U. Md.), Associate Professor.  
 Cara Krulewitch, R.N., M.S. (U. Ill.), Instructor.  
 Barbara Kupchak, R.N., Ph.D. (U. Tex.), Assistant Professor.  
 Susan Leight, R.N., M.S.N. (WVU), Visiting Instructor.  
 Deborah Lewis, R.N., M.S.N. (WVU), Visiting Instructor.  
 Susan McCrone, R.N., Ph.D. (U. Utah), Assistant Professor.  
 Patricia M. McGill, R.N., M.S.N. (Med. C. Va.), Lecturer, Charleston Unit.  
 Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), Professor.  
 Sandra Marra, R.N., M.S.N. (WVU), Visiting Instructor.  
 Kathleen H. Marsland, R.N., M.S. (U. Colo.), Assistant Professor.  
 Elise Michael, R.N., Ph.D. (Case West. Res. U.), Associate Professor.  
 Karen E. Miles, R.N., M.S.N. (WVU), Associate Professor.  
 Virginia G. Miller, R.N., M.S.N. (WVU), Assistant Professor.  
 Louise Minnich, R.N., M.S.N. (Boston C.), Visiting Instructor, Charleston Unit.  
 Marsha F. Mitchell, R.N., Ed.D. (WVU), Assistant Professor.  
 Alvita Nathaniel, R.N., M.S.N. (WVU), Lecturer, Charleston Unit.  
 Cynthia A. Neely, R.N., M.S. (WVU), Lecturer, Charleston Unit.  
 Mary Nemeth-Pyles, R.N., M.S.N. (WVU), Visiting Instructor, Charleston Unit.  
 C. Lynne Ostrow, R.N., Ed.D. (WVU), Associate Professor.  
 Roberta Papini, R.N., M.S.N. (WVU), Visiting Instructor.  
 Carol Parsons, R.N., M.S.N. (WVU), Visiting Instructor.  
 Luz S. Porter, R.N., Ph.D. (NYU), Professor; Chairperson, Graduate Unit.  
 Sally Reel, R.N., M.S.N. (WVU), Visiting Instructor.  
 Kathryn Riffle, R.N., Ph.D. (NYU), Professor.  
 Jacqueline W. Riley, R.N., M.N. (U. Fla.), Associate Professor.  
 Mary Anne Rosswurm, R.N., Ed.D. (U. Cincinnati), Assistant Professor, Charleston Unit.  
 Linda Rotruck, R.N., M.S.N. (WVU), Visiting Instructor.  
 Jessie Sams, R.N., Ph.D. (U. Pitt), Assistant Professor.  
 Thomas C. Schaal, R.N., Ph.D. (U. Pitt), Associate Professor.  
 Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt), Associate Professor.  
 Patricia A. Simoni, R.N., M.S.N. (WVU), Assistant Professor.  
 Lisa Sinacore, R.N., M.S. (St. Louis U.), Visiting Instructor.  
 Martha N. Smith, R.N., Ph.D. (U. Mich.), Professor.  
 Marilyn Smith, R.N., M.S. (U. Mich.), Visiting Instructor.  
 Mary Jane Smith, R.N., Ph.D. (NYU), Professor.  
 Frances Snodgrass, R.N., M.S.N. (Tex. Wom. U.), Visiting Assistant Professor, Charleston Unit.  
 Loreto Sobong, Ph.D. (NYU), Research Associate.  
 Jacqueline Stemple, R.N., Ed.D. (WVU), Associate Professor; Chairperson, Sophomore Unit.  
 Fredona E. Stenger, R.N., M.S.N. (Boston U.), Associate Professor.  
 Christina Stephenson, R.N., M.S.N. (Yale U.), Visiting Assistant Professor.  
 Janet F. Wang, R.N., Ph.D. (U. Pitt), Assistant Professor.  
 Anel Witte, R.N., M.S. (U. Md.), Lecturer.  
 Jan Youngblood, M.S., M.P.H. (U. Minn.), Lecturer, Charleston Unit.

# School of Pharmacy

Marie A. Abate, Pharm.D. (U. Mich.), Associate Professor of Clinical Pharmacy;  
Director, Drug Information Center.

C. Bruce Alderman, B.S. (WVU), Clinical Instructor.

Joseph Alderson III, B.S. (WVU), Clinical Instructor.

Scot A. Anderson, B.S. (WVU), Clinical Instructor.

Lewis J. Anile, B.S. (Duquesne U.), Clinical Instructor.

Julia W. Bailey, B.S. (WVU), Clinical Instructor.

John P. Barrickman, M.B.A. (Ohio U.), Clinical Instructor.

James D. Bartsch, B.S. (U. Wisc.), Clinical Assistant Professor.

Jerry A. Bovenizer, B.S. (WVU), Clinical Instructor.

Heidi Braun, Pharm.D. (U. Mich.), Clinical Assistant Professor.

Calvin C. Brister, Ph.D. (U. Miss.), Professor of Biopharmacy.

David W. Brosh, B.S. (WVU), Clinical Instructor.

David B. Brushwood, J.D. (U. Kans.), Associate Professor of Behavioral and  
Administrative Pharmacy.

David M. Caplan, B.S. (WVU), Clinical Instructor.

John V. Carney, B.S. (WVU), Clinical Instructor.

L. Louis Carter, B.S. (WVU), Clinical Instructor.

Gary Chan, M.S., Pharm.D. (U. Minn.), Assistant Professor of Clinical Pharmacy;  
Director, Pharmacokinetic Services (Charleston).

David Chesley, Pharm.D. (U. Neb.), Clinical Instructor.

Thomas S. Clark, M.D. (WVU), Clinical Assistant Professor.

Roger S. Cole, B.S. (WVU), Clinical Instructor.

James K. Coleman, B.S. (WVU), Clinical Instructor.

John E. Corkrean, B.S. (WVU), Clinical Instructor.

D. Stephen Crawford, B.S. (WVU), Clinical Instructor.

R. Scott Criss, B.S. (WVU), Clinical Instructor.

David L. Dalton, B.S. (WVU), Adjunct Instructor in Pharmacy Administration.

Mary E. Davis, Ph.D. (Mich. St. U.), Associate Professor of Pharmacology.

Robert G. Davis, B.S. (WVU), Clinical Instructor.

Teresa Knight Davis, B.S. (WVU), Clinical Instructor.

James V. Dorociak, Pharm.D. (U. Ill.), Clinical Assistant Professor.

J. Richard Eddy, M.S. (U. Md.), Clinical Instructor.

David P. Elliott, Pharm.D. (U. Tex.), Assistant Professor of Clinical Pharmacy; Vice-  
Chairperson, Department of Clinical Pharmacy, Charleston Division.

Robert L. Foster, Jr., B.S. (Auburn U.), Clinical Instructor.

Linda Frederick, B.S. (WVU), Clinical Instructor.

Jack E. Fruth, B.S. (Ohio St. U.), Clinical Instructor.

A. Randon Fusco, B.S. (WVU), Clinical Instructor.

Barbara J. Gastineau, B.S. (WVU), Clinical Instructor.

Gary J. Gijsbers, Pharm.D. (Wayne St. U.), Clinical Assistant Professor.

Gwendolyn S. Gill, B.S. (WVU), Clinical Instructor.

Victoria P. Giuliani, B.S. (WVU), Clinical Instructor.

Douglas D. Glover, M.D. (Emory U.), Associate Professor of Clinical Pharmacy.

Rochelle Goto, B.S. (Mass. C. Pharm.), Adjunct Instructor in Pharmacy  
Administration.

Joseph F. Griffith, B.S. (WVU), Clinical Instructor.

Robert K. Griffith, Ph.D. (Ohio St. U.), Associate Professor of Medicinal Chemistry.

Willard S. Griffith, B.S. (Cincinnati C. Pharm.), Clinical Instructor.

John W. Griffiths, B.S. (Ohio St. U.), Clinical Instructor.

Roy Gryskovich, B.S. (WVU), Clinical Instructor.

Peter R. Gwilt, Ph.D. (U. Ky.), Associate Professor of Pharmacokinetics.

J. Douglas Hammond, B.S. (WVU), Clinical Instructor.

Theodore D. Henry, B.S. (WVU), Clinical Instructor.

Robert D. Hickman, B.S. (WVU), Clinical Instructor.

Robert Hockenberry, B.S. (WVU), Clinical Instructor.

L. Dean Holmes, B.S. (WVU), Clinical Instructor.

Stephen A. Howard, Ph.D. (U. Mich.), Adjunct Professor of Pharmaceutics.  
 Kent C. Hunter, B.S. (WVU), Clinical Instructor.  
 Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), Professor of Clinical Pharmacy;  
 Chairperson, Department of Clinical Pharmacy.  
 Janice Jackson, B.S. (WVU), Clinical Instructor.  
 Richard L. Jarvis, B.S. (WVU), Clinical Instructor.  
 Patricia Johnston, B.S. (WVU), Clinical Instructor.  
 Sara D. Jones, B.S. (Ohio St. U.), Clinical Instructor.  
 Steven C. Judy, B.S. (WVU), Clinical Instructor.  
 David M. Kelly, Pharm.D. (Mercer U.), Clinical Assistant Professor.  
 Nahla Khoury, Ph.D. (WVU), Adjunct Assistant Professor of Pharmaceutics.  
 Charles Kibler, B.S. (WVU), Adjunct Instructor in Pharmacy Administration.  
 Lee E. Kirsch, Ph.D. (Ohio St. U.), Adjunct Assistant Professor of Pharmaceutical  
 Chemistry.  
 Teresa M. Knight, B.S. (WVU), Clinical Instructor.  
 Mary Beth Knoop, B.S. (WVU), Clinical Instructor.  
 James E. Krahulec, J.D. (Kent C. Law), Adjunct Instructor in Pharmacy  
 Administration.  
 David Law, B.S. (WVU), Clinical Instructor.  
 Dennis R. Lewis, B.S. (WVU), Clinical Instructor.  
 James Kai-Jin Lim, Ph.D. (U. N.C.), Professor of Pharmaceutics.  
 Buford T. Lively, Ed.D. (WVU), Associate Professor of Behavioral and  
 Administrative Pharmacy; Chairperson, Department of Behavioral and  
 Administrative Pharmacy.  
 J. Fred Logan, B.S. (WVU), Clinical Instructor.  
 Anita G. Lorenzo, Pharm.D. (U. Tex.), Clinical Assistant Professor.  
 Robert B. Lowe, Pharm.D. (U. Mich.), Clinical Associate Professor of Clinical  
 Pharmacy.  
 Daniel Lusk, B.S. (WVU), Clinical Instructor.  
 Joseph K. H. Ma, Ph.D. (Duquesne U.), Professor of Pharmaceutical Chemistry.  
 Sundareswaran Madhavan, M.B.A., Ph.D. (Purdue U.), Assistant Professor of  
 Behavioral and Administrative Pharmacy.  
 Eugene H. Makela, Pharm.D. (Med. U. S.C.), Assistant Professor of Clinical  
 Pharmacy.  
 Carl J. Malanga, Ph.D. (Fordham U.), Professor of Biopharmacy; Chairperson,  
 Department of Basic Pharmaceutical Sciences.  
 Mary Lou Malanga, B.S. (Fordham U.), Clinical Assistant Professor.  
 Carroll C. Martin, B.S. (WVU), Clinical Instructor.  
 Robert J. Martin, Jr., B.S. (U. Md.), Clinical Instructor.  
 Michael F. Maruish, B.S. (WVU), Clinical Instructor.  
 Joseph C. McGlothlin, B.S. (WVU), Clinical Instructor.  
 Debra A. McGraw, B.S. (WVU), Clinical Instructor.  
 Kathy R. McIntire, B.S. (WVU), Clinical Instructor.  
 Daniel J. McKeever, B.S. (WVU), Clinical Instructor.  
 Thomas E. Menighan, B.S. (WVU), Clinical Instructor.  
 Ronald W. Meredith, B.S. (WVU), Clinical Instructor.  
 Vernon R. Midcap, B.S. (WVU), Clinical Assistant Professor.  
 David W. Miller, B.S. (WVU), Clinical Instructor.  
 John E. Miller, B.S. (WVU), Clinical Instructor.  
 Julie E. Morgan, B.S. (WVU), Clinical Instructor.  
 Ellen L. Mosti, Pharm.D. (Duquesne U.), Clinical Assistant Professor.  
 Kenneth Muha, B.S. (U. Ga.), Clinical Instructor.  
 Jay Nematollahi, Ph.D. (U. Calif.), Adjunct Professor of Medicinal Chemistry.  
 Patrick K. Noonan, Ph.D. (U. Calif.—S.F.), Adjunct Assistant Professor of  
 Pharmacokinetics.  
 Gerald W. Nottingham, B.S. (U. Ky.), Clinical Instructor.  
 Frank D. O'Connell, Ph.D. (Purdue U.), Professor of Pharmacognosy; Associate Dean.  
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# *Health Sciences Center Catalog*



***1991-93 Bulletin***



# West Virginia University Health Sciences Center

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## 1991-93 Catalog

Basic Sciences  
School of Dentistry  
School of Medicine  
School of Nursing  
School of Pharmacy

The *1991-93 West Virginia University Health Sciences Center Catalog* is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the University of West Virginia Board of Trustees, University administrators, and the faculties of the schools and colleges to best meet the goals and objectives of the University. The University, therefore, reserves the right to change, delete, supplement, or otherwise amend at any time the information, course offerings, requirements, rules, and policies contained herein without prior notice.

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# University Calendar, 1991-92

## First Semester, 1991-92 Year

August 22, 23, Thursday and Friday .....	New Student Orientation
August 23, Friday .....	General Registration
August 26, Monday .....	First Classes
August 26, Monday .....	Late Registration Fee in Effect
August 30, Friday .....	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
September 2, Monday .....	Labor Day Recess
September 9, Monday .....	Faculty Assembly
September 9, Monday .....	Rosh Hashannah, Day of Special Concern
September 18, Wednesday .....	Yom Kippur, Day of Special Concern
October 11, Friday .....	Mid-Semester
October 15, Tuesday .....	Mid-Semester Reports Due
November 1, Friday .....	Last Day to Drop a Class
November 23, Saturday, to December 1, Sunday, inclusive .....	Thanksgiving Recess
December 12, Thursday .....	Last Day to Withdraw From University
December 13, Friday .....	Last Day of Classes
December 16, Monday, to December 21, Saturday, inclusive .....	Final Examinations
December 22, Sunday, to January 9, Thursday, inclusive .....	Christmas Recess

## Second Semester, 1991-92 Year

January 10, Friday .....	General Registration
January 13, Monday .....	First Classes
January 13, Monday .....	Late Registration Fee in Effect
January 17, Friday .....	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
January 20, Monday .....	Martin Luther King, Jr. Birthday Recess
February 7, Friday .....	(Not a Holiday) West Virginia University Day
February 28, Friday .....	Mid-Semester
March 3, Tuesday .....	Mid-Semester Reports Due
March 14, Saturday, to March 22, Sunday .....	Spring Recess
March 27, Friday .....	Last Day to Drop a Class
April 17, Friday .....	Friday Before Easter Recess
April 18, Saturday .....	Passover, Day of Special Concern
April 30, Thursday .....	Last Day to Withdraw From University
May 1, Friday .....	Last Day of Classes
May 4, Monday, to May 9, Saturday, inclusive .....	Final Examinations
May 11, Monday .....	Grade Reports for All Graduates Due in Dean's Office
May 11, Monday .....	Dean's Reports for All Graduates Due in Office of Admissions and Records
May 16, Saturday .....	Alumni Day
May 17, Sunday .....	Commencement

The University calendar includes the academic year, which is composed of two semesters of approximately seventeen weeks each, and two summer sessions of six weeks each.

# Tentative Calendar, 1992-93

## First Semester

August 19, 20, 21, Wednesday, Thursday, Friday	Orientation
August 21, Friday	Registration
August 24, Monday	Classes begin
August 24, Monday	Late registration
August 28, Fri.	Last day to register
September 7, Mon.	Labor Day recess
September 14, Mon.	Faculty Assembly
September 28, Mon.	Rosh Hashannah (Day of special concern)
October 7, Wed.	Yom Kippur (Day of special concern)
October 9, Fri.	Mid-semester
October 13, Tue.	Mid-semester reports due
October 30, Fri.	Last day to drop class
November 3, Tue.	Election day recess
November 21, Sat., through Nov. 29, Sun.	Thanksgiving recess
December 10, Thur.	Last day to withdraw from University
December 11, Fri.	Last day of classes
December 14, Mon., through Dec. 19, Sat.	Final exam week
December 20, Sun., through Jan. 6, inclusive	Christmas recess
December 29, Tue.	Degrees conferred (No ceremonies)

## Second Semester

Jan. 7, 8, Thursday and Friday	Registration
January 11, Monday	First day of classes
January 11, Monday	Late registration
January 15, Friday	Last day to register
January 18, Monday	Martin Luther King recess
February 7, Sunday	(Not a holiday) West Virginia Day
February 26, Friday	Mid-semester
March 2, Tuesday	Mid-semester reports due
March 13 through March 21	Spring break
March 26, Friday	Last day to drop class
April 6, Tuesday	Passover
April 9, Friday	Friday before Easter
April 29, Thursday	Last day to withdraw from University
April 30, Friday	Last day of classes
May 3, Monday through May 8,	Saturday Final exam week
May 10, Monday	Grade reports for all graduates due in dean's office
May 11, Tuesday	Dean's reports on graduates
May 15, Saturday	Alumni Day
May 16, Sunday	Commencement

## Summer Sessions, 1992

May 20, Wednesday .....	Registration, First Summer Session
May 20, Wednesday .....	First Classes
May 21, Thursday .....	Late Registration Fee
May 22, Friday .....	Last Day to Register, Add Courses, Make Section Changes
May 25, Monday .....	Memorial Day Recess
June 30, Tuesday .....	Final Exam for First Six-Week Session
July 1, Wednesday .....	Registration, Second Summer Session
July 1, Wednesday .....	First Classes
July 2, Thursday .....	Late Registration Fee
July 6, Monday .....	Independence Day Recess
July 6, Monday .....	Last Day to Register, Add Courses, Make Section Changes
August 11, Tuesday .....	Final Exam for Second Six-Week Session

## Summer Sessions 1993

May 19, Wednesday .....	Registration
May 19, Wednesday .....	First Day of Classes
May 20, Thursday .....	Late Registration Fee
May 21, Friday .....	Last Day to Register
May 31, Monday .....	Memorial Day Recess
June 30, Wednesday .....	Last Day of Classes
June 30, Wednesday .....	Final Exam
July 1, Thursday .....	Registration
July 1, Thursday .....	First Day of Classes
July 2, Friday .....	Late Registration
July 5, Monday .....	Independence Day Recess
July 6, Tuesday .....	Last Day to Register, Add Courses, Make Section Changes
July 29, Thursday .....	Last Day to Drop
August 11, Wednesday .....	Day to Withdraw
August 12, Thursday .....	Last Day of Classes
August 12, Thursday .....	Final Exam
August 20, Friday .....	Degrees conferred (No ceremonies)

# West Virginia University Health Sciences Center

West Virginia University's Schools of Dentistry, Medicine, Nursing, and Pharmacy at the Health Sciences Center offer a comprehensive range of undergraduate, graduate, and professional degrees in health care and biosciences.

The 24 degree programs offered by the Health Sciences Center are intended to provide West Virginia with a strong group of professionals prepared to meet the varied health care needs of the state. Among the more than 10,000 alumni of WVU Health Sciences Center programs, there are about one-third of the state's practicing physicians, two-thirds of its dentists, three-quarters of its pharmacists, and hundreds of nurses, medical and dental technologists, physical therapists, and other health professionals.

A unique combination of state and federal support, charitable contributions from individuals and foundations, and investment by private corporations has allowed the Health Sciences Center to build an unequalled environment for health education. The Health Sciences Center includes three hospitals, a cancer center, and a medical and dental office building. All were built since 1986 and were designed to meet the needs of patient care, education, and clinical research.

The WVU Health Sciences Center also includes medical divisions in Charleston and Wheeling and relationships with hospitals and physicians in rural areas of the state. These facilities offer students the opportunity to learn their professions in a setting which realistically reflects the conditions they will encounter after graduation.

## Clinical Education Facilities

The West Virginia University Health Sciences Center includes a diverse group of health care facilities, providing a training ground--in patient care and research--for students in the health professions. West Virginia University Hospitals, the Physician Office Center, the Mary Babb Randolph Cancer Center, Chestnut Ridge Psychiatric Hospital, MountainView Regional Rehabilitation Hospital, and the National Institute of Occupational Safety and Health (NIOSH) are modern facilities that advance medical research and accommodate the demands of contemporary medical, dental, nursing, and pharmacy care.

WVU Hospitals entered a new era in 1988 with the opening of a 376-bed tertiary teaching facility--Ruby Memorial, the primary teaching hospital for the Health Sciences Center. It is equipped and staffed to provide the most comprehensive and advanced care available in West Virginia, thus making it a superb clinical education site for students. Ruby also houses the Jon Michael Moore Trauma Center and WVU Children's Hospital with their specialized care units.

The Physician Office Center, the Health Sciences Center's outpatient facility for education and patient care, accommodates the largest multi-specialty group practice in West Virginia, with 60 primary and specialty care areas. Dental facilities, the Eye Center and the Outpatient Pharmacy are integral parts of the Physician Office Center.

Chestnut Ridge Hospital is a 70-bed private psychiatric hospital on the Health Sciences Center campus. It is staffed clinically by faculty from the School of Medicine and is the focal point of education in the behavioral and psychiatric sciences.

MountainView Regional Rehabilitation Hospital provides unique educational opportunities for students in neurological disease, trauma rehabilitation, and physical and occupational therapy.

Many WVU students experience part of their clinical training at the Charleston Division of the Health Sciences Center, which is affiliated with Charleston Area Medical Center. In addition, many WVU students train at off-campus sites where they learn the demands of rural health care first-hand.

### **Dental Clinic**

The School of Dentistry's clinic at the Health Sciences Center accepts patients who have dental problems of teaching value. Faculty members closely supervise those students assigned to clinic patients. This integration of teaching and patient care is an important component of all of the units at the Health Sciences Center.

## **Admission**

To apply for admission to the various schools of the Health Sciences Center, write to the Assistant Director of Admissions and Records, 1170 Health Sciences North, Morgantown, WV 26506, and ask for the appropriate application forms.

Because space at the HSC is limited and our applications are numerous, we give preference in the admissions process to qualified residents of West Virginia. However, we always consider outstanding nonresident applications. We give most careful consideration to those personal qualifications that reflect your fitness for the study and practice of your chosen profession.

Because we are primarily a group of professional schools and most of our applicants are enrolled in undergraduate studies at a residential college or university, we remind you to include your permanent address with your request for an application form.

**Note: During the first semester of your first year at WVU Health Sciences Center, we require that you complete certain prescribed immunization and diagnostic procedures.**

### **Application Fees**

Application fees for the Schools of Dentistry and of Medicine are \$30.00. Application fees for all other Health Sciences Center programs are \$10.00. Application fees must accompany your application form.

When you are accepted into one of our programs (except for Medicine or nonresident applicants to the School of Dentistry), you are asked to deposit \$75.00 to make your acceptance official. The deposit for Medicine and for nonresidents in the School of Dentistry is \$100.00. These deposits are applied toward your first semester tuition when you enroll.

If you pay your deposit but do not enroll in the School of Medicine, your deposit is refundable until May 1 of the year you would have enrolled. Deposits for all other programs are not refundable.

Specific entrance requirements for all Health Sciences programs are detailed in the section pertaining to each program.

For information about freshman, transfer, and international admission to West Virginia University, please refer to the undergraduate catalog.

# Health Sciences Programs At West Virginia University

Degree Program	Bachelor	Master	Doctorate
<b>School of Dentistry</b>			
Dental Hygiene	B.S.	M.S.	
Dentistry			D.D.S.
Endodontics		M.S.	
Orthodontics		M.S.	
<b>School of Medicine</b>			
Anatomy		M.S.	Ph.D.
Biochemistry (Medical)		M.S.	Ph.D.
Biomedical Sciences			Ph.D.*
Medical Technology	B.S.	M.S.	
Medicine			M.D.
Microbiology (Medical)		M.S.	Ph.D.
Pharmacology and Toxicology		M.S.	Ph.D.
Physical Therapy	B.S.		
Physiology (Medical)		M.S.	Ph.D.
<b>School of Nursing</b>			
Nursing	B.S.N.	M.S.N.	
<b>School of Pharmacy</b>			
Pharmaceutical Sciences		M.S.	Ph.D.
Pharmacy	B.S.Pharm.		D.Pharm.
<b>University Hospital</b>			
Medical Graduate Residencies			
Radiologic Technology	Certificate		

\*Awarded under the auspices of the degree-granting authority of West Virginia University, but in cooperation with the Health Sciences departments of the Marshall University School of Medicine. (For Details, see the *WVU Graduate Catalog* or the *Marshall University Graduate Catalog*.)

## Student Responsibility

As a student, you are responsible for your academic well being. Specifically, you are responsible for knowing your scholastic standing as it relates to the published regulations and standards of West Virginia University. This responsibility includes the regulations of your college or school and the regulations of the department or division in which you are earning a degree.

## **Regulations Affecting Degrees**

All West Virginia University degrees are conferred by the University of West Virginia Board of Trustees and are based upon the recommendations of the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer session in which you complete the requirements for that degree.

You become eligible to graduate when you complete the requirements of the University and your college or school which were in effect at the time you first registered at the University. You have seven years after your first registration to complete the degree requirements. If you do not, you will have to meet the requirements listed in a later catalog—one that is no more than seven years old at the time that you complete your studies. With the consent of your adviser and your dean, you may choose to meet the conditions published in a later catalog. The only program changes that students must observe are those enacted by the Board of Trustees or by local, state, or federal law; you must follow these changes.

In order to graduate, you must see your academic adviser and complete an application for graduation and diploma; file your application during the first month of the semester or summer session in which you expect to graduate.

West Virginia University policy dictates that, in view of their professional responsibilities to the general public, the faculty of a professional school may recommend to the President of the University that a student be removed from its rolls. The faculties' formal decision for this action must be presented in writing to the President. The decision of the faculty must find that the student is not fit to meet the qualifications and responsibilities of the profession.

West Virginia University will not confer a degree on any candidate nor will it issue a transcript to any student until payment of all tuition, fees, and other indebtedness to any unit of the University is made.

## **Credits Required**

Each degree program is based upon a combination of required courses and electives. Certain University requirements are listed below. In addition, the various colleges and schools determine their own credit requirements and course grade averages for graduation. Total credits vary from 128 to 145. Required grade averages range from 2.0 to 2.5.

## **Liberal Studies Program**

The requirements of the LSP apply to all students who entered WVU as freshmen after August 15, 1988 or students transferring to WVU who entered any institution of higher education after August 15, 1988. All other students may choose to fulfill either the requirements of the LSP or of the previous core curriculum.

## **Preface**

West Virginia University believes that its baccalaureate graduates, in addition to developing competence in major and minor fields of study, should be broadly educated. The University's goal is to prepare its graduates to integrate knowledge from a wide variety of fields and to value the continuing search for breadth of knowledge; to be creative and open to new ideas; and to be able to deal constructively with the technological, cultural, and social changes that challenge us in our own country and the world. In order that West Virginia University graduates may be able to adapt to changing circumstances throughout a lifetime of learning, the Liberal Studies Program (LSP) helps students to learn how to acquire knowledge, how to make critical judgments in a logical and rational manner, and how to

communicate their findings clearly. The Program encourages students to appreciate the past; to value lasting traditions; to accept their responsibilities as citizens of a free society; to respect the traditions, values and individuality of fellow human beings; to broaden their knowledge about people different from themselves, whether by reason of nationality, age, class, gender, or race; and to understand the basic concepts and principles of mathematics and the sciences.

Therefore, West Virginia University baccalaureate graduates are expected to possess knowledge and experience in three broad clusters of learning: the arts and humanities, the social and behavioral sciences, and mathematics and natural sciences. In the arts and humanities, students learn to understand and appreciate the human experience. In the social and behavioral sciences, students develop an awareness of personal, interpersonal, and societal forces that shape individual lives. In mathematics and the natural sciences, students acquire an understanding of the unifying principles and methods of science and their application to natural phenomena. University graduates also are expected to be able to communicate effectively in the written English language and to possess skills in post-high-school mathematics.

## Components of the Program

West Virginia University Liberal Studies Program requirements for all students who receive the baccalaureate degree are divided into a skills component and a distribution component. These are described below.

### A. Skills Requirements

#### 1. Writing

- a. All students must successfully complete English 1 and 2. This requirement is in addition to the Cluster A requirements described in Section B below.
- b. All students must successfully complete at least one course that requires a substantial writing component and in which the grade is partially determined by writing skills. These courses will be designated by a "W" in the *Schedule of Courses*. The student must complete English 2 before fulfilling the "W" requirement.

#### 2. Mathematics

All students must successfully complete at least 3 hours of mathematics or statistics at the college algebra level or above. This requirement is in addition to the Cluster C requirement which is described in Section B below. Courses approved for the mathematics skills requirement: Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, and 168; Economics 125 and Statistics 101.

### B. Distribution Requirements

#### 1. Description of Program Clusters

The University courses in the LSP that provide students with broad liberal knowledge and experience are grouped into three Clusters:

**a. Cluster A: Humanities and Fine Arts:** The study of humanities develops knowledge of and appreciation for the accumulated wisdom and experience contained in world literature, history, fine arts, religion, and philosophy, with the objective of bringing the student to an active consciousness of the living, operating, and continuing values of human culture.

**b. Cluster B: The Social and Behavioral Sciences:** The social and behavioral sciences develop in students the knowledge and appreciation of both them

selves and the world in which they live. Through the study of anthropology, economics, geography, linguistics, political science, psychology, sociology, and communication studies, students are able to comprehend major concepts, evaluate movements and ideas, and anticipate future trends in societies both at home and abroad.

- c. **Cluster C: Natural Sciences and Mathematics:** Courses in the natural sciences and mathematics provide information about the natural world, and provide a perspective on how an understanding of the natural world is developed. Educated persons should have a knowledge of the physical, chemical, geological, and biological entities and processes that constitute the natural world. Courses in mathematics, statistics, and computer science can provide the technical tools for an understanding of the natural world, as well as an understanding of the methods and value of mathematics considered as a discipline in itself.

## 2. Distribution of Cluster Requirements

- a. **Cluster A Requirements:** 12 hours of Cluster A courses must be successfully completed, distributed according to the following provisions:
    - (1) Courses must be successfully completed in three disciplines.
    - (2) Two courses must be successfully completed in the same discipline.
    - (3) If foreign language courses are chosen to fulfill Cluster A requirements, no student may use more than one first semester of an elementary foreign language. Language courses in a student's native language may not be used to fulfill Cluster A requirements.
    - (4) No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster A requirements.
  - b. **Cluster B Requirements:** 12 hours of Cluster B courses must be successfully completed and distributed according to the following provisions:
    - (1) Courses must be successfully completed in three disciplines.
    - (2) Two courses must be successfully completed in the same discipline.
    - (3) No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster B requirements.
  - c. **Cluster C Requirements:** 11-12 hours of Cluster C courses must be successfully completed and distributed according to the following provisions:
    - (1) Courses must be successfully completed in two disciplines.
    - (2) At least one course must include a laboratory.
    - (3) No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster C requirements.
  - d. One three credit-hour course must focus substantially on the study of a foreign or minority culture or cultures or on women and/or issues of gender.
- ### 3. Inventory of LSP Courses

The following courses listed in Clusters A, B, and C do not constitute an inclusive listing. The Liberal Studies Committee will be changing the list of courses as evaluations are continually made of courses submitted to the LSP Committee for its approval. Students and advisers should consult the latest *Schedule of Courses* for the most recent inventory of courses included in the Liberal Studies Program. Any course listed at any time during the student's period of study may be counted for Liberal Studies Program credit. An asterisk precedes the course numbers for those courses which satisfy the Foreign Culture, Minority, or Gender Studies requirement (see B.2.d.).

## **Cluster A Courses:**

Arabic 1, 2, 3, 4.  
Art 30, 105, 106.  
Chinese 1, 2, 3, 4.  
Classics 1, 2, 3, 4, 11, 12, 13, 14, 101, 102.  
Communication Studies 21, 187.  
English 21, 22, 24, 25, 30, 35, 36, 40, \*80, \*85, 125, 130, 131, 132, 133, 134, 141, 143, 150, 170, 171, 172, 175, 178, 180, 181, \*186, \*188.  
Foreign Literature in Translation \*13, \*14, \*15, \*16, \*17, \*18, \*111, \*112, \*121, \*122, \*131, \*132, \*141, \*142, \*151, \*152, \*161, \*162, \*166, \*171, \*181, \*182, \*188, \*189.  
French 1, 2, 3, 4, 10, 11.  
German 1, 2, 3, 4, 10, 11.  
History 1, 2, \*5, \*6, 11, 12, 52, 53, 100, 101, 103, 105, 107, 109, \*117, \*118, 119, 120, \*121, 122, 155, 156, 157, 159, 161, 177.  
Humanities 1, 2, 3, 4, \*5, 10, 11.  
Italian 1, 2, 3, 4.  
Japanese 1, 2, 3, 4.  
Landscape Architecture 112.  
Linguistics 3.  
Multidisciplinary Studies \*40, 91.  
Music 30, 33, 34, 129, 136, 137, 138.  
Philosophy 1, 2, 3, 4, 10, 13, 15, 17, 20, 103, 105, 106, 108, 111, \*113, 120, 121, \*122, 123, \*125, 150, 158, 159, 106 or/Math. 161, 166, 171, 172, 197.  
Polish 1, 2.  
Portuguese 1, 2, 3, 4.  
Religious Studies 5, 100, 101, 102, 103, 104, 105, 110, 111, 112, 120, 121, 128, \*130, \*131, \*132, 142, 150.  
Russian 1, 2, 3, 4.  
Spanish 1, 2, 3, 4, 10, 11.  
Theatre 30, 50, 74.  
Women's Studies \*40.

## **Cluster B Courses:**

Agricultural Education 162.  
Child Development and Family Studies 10.  
Communication Studies 11, 12, 14, 80, 106, 109, \*134, \*135, 180.  
Economics 51, 54, 55.  
Forestry 140.  
Geography 1, \*2, 8, 105, 109, 110, 140, 141, \*143, \*144, 145.  
History \*4, \*141, \*142.  
Journalism 1.  
Linguistics 1.  
Multidisciplinary Studies 2, \*40, 50, \*60, 70, 90, 92.  
Mineral and Energy Resources 97.  
Political Science 1, 2, 3, 7, 110, 120, \*137, \*150, \*151, 160, 170, 171.  
Psychology 1, 141, 151, \*170.  
Recreation and Parks 43.  
Resource Management 1.  
Social Work \*47.  
Sociology & Anthropology 1, \*5, 7, \*51, 121, 122, 123, 125, 131, 132, \*135,

136, 137, \*138, 140, \*145, 152, \*155, \*156, 157, 158, 159, \*160, 162.  
Women's Studies \*40, \*145.

### **Cluster C Courses:**

Agricultural Microbiology 141.  
Astronomy 106.  
Biology 1, 2, 3, 4.  
Chemistry 11, 12, 15, 16, 17, 18.  
Computer Science 1, 5.  
Economics 125.  
Geography 7, 107.  
Geology 1, 2, 3, 4, 7.  
Human Nutrition and Foods 71.  
Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, 168.  
Multidisciplinary Studies 2, \*60, 70, 90, 91.  
Philosophy 11.  
Physical Science 11, 12.  
Physics 1, 2, 7, 8, 11.  
Statistics (Stat.) 101

### **Approved 200-Level Courses**

No 200-level courses are included in Clusters A, B, and C because they are deemed to be not ordinarily appropriate for the Liberal Studies Program. However, a student may petition to take one 200-level course, from the list of approved courses indicated below, in fulfillment of the LSP requirement for each of the three cluster areas. The student must petition through his/her adviser for approval. This can be accomplished with the use of a standard petition form filled out by the student, approved by the adviser, and placed in the student's file.

### **Cluster A Courses:**

Communications Studies 230.  
English 211, 220, 235, 236, 240, 250, 255, 256, 261-268, \*288.  
History 200, 204, 205, 206, 207, 208, 214, \*225, \*226, 231, 232, \*245, \*246, \*251, \*252, 253, 259.

### **Cluster B Course:**

Communications 221.  
Economics 211.  
Health Education \*290.  
History 208, 211, \*227, \*229, \*230, 259.  
Social Work \*247.  
Political Science \*235, \*250, \*251, \*254, \*255, \*256, \*258.  
Technical Education \*245.

### **Academic Advising**

When you enter W VU, you are assigned an academic adviser. Your adviser assists you as you prepare your schedule, assigns classes as required by your degree program, and certifies your study list to the Director of Admissions and Records. Your adviser is also expected to give you advice and sympathetic guidance. You are expected to meet with your adviser to discuss your academic problems.

Your adviser may call you to have a conference if you have excessive absences.

The adviser may make recommendations and adjustments if such adjustments are feasible. If your adviser cannot resolve your attendance problem with you, your case is reported to the Dean of your college or school.

If you are a student in Arts and Sciences, Human Resources and Education, or Social Work, you are admitted to a pre-program in a particular major. You remain in a pre-program and are advised by a special academic adviser until you fulfill all requirements for admission to the degree program.

You may choose to enter other pre-programs. Normally these programs require you to complete 30-68 credits before you are admitted to a degree program. If you select one of these pre-programs, you are advised through the University Advising Center. The Center has professional advisers for the following areas: pre-business and economics, pre-journalism, pre-medical technology, pre-nursing, pre-pharmacy, and pre-physical therapy.

Students who are undecided on a career field may enroll in general studies. If you choose this option, you can explore several career and academic options before you make a final choice. While you explore these different areas, you enroll in courses that fulfill general University requirements for graduation and also provide a solid liberal arts foundation. You can be a general studies student for four semesters or until you are admitted to a degree program. If you select general studies, your adviser will be located in the University Advising Center. The Center staff also advises part-time and special (non-degree) students.

### **Transfer of Credits**

If you decide to take course(s) at another school, you must have written approval from your adviser, your dean, and the Director of Admissions and Records or his designee. To receive such approval, you must have a C average. All approved college-level work is accepted for transfer from institutions in the WV state systems, provided the above requirements have been met. Only courses passed with grades of C or higher are accepted from institutions not in the state system.

### **Branch, Community, and Junior Colleges**

You may receive credit for seventy-two hours of credit and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education. Such courses may apply toward a baccalaureate degree at WVU if they are the equivalent of a course at WVU. You may also transfer credit for college-parallel courses taken at community colleges or junior colleges that are not a part of the West Virginia system of higher education. However, you will receive credit only for those courses for which you have earned a grade of C or higher. The hours that you transfer from a community college or junior college are normally limited to a maximum of 72 hours of lower division courses.

### **Requirements as to Residence**

If you decide to transfer to WVU from another institution of higher learning, then you should transfer no later than the start of your third year. Under no circumstances will a student who enters WVU later than October 1 in any year be allowed to receive a degree at the next commencement.

In some special cases, you can leave WVU at the end of your third year, and still receive your degree from WVU. You must enter another accredited institution with the purpose of taking a combined program that will lead to two degrees or prepare for graduate study. Before you leave, you must apply to the Academic Standards Committee of your college to request permission to do the work of the fourth year, or

a part thereof, at the other institution but still receive the degree from WVU. You will receive your degree when you present the proper records from the other school.

If you are a transfer student who has completed all of your undergraduate work in another school in the West Virginia system of higher education, then you must complete either your last 30 hours of work at WVU or at least 36 hours of work at WVU of which 16 of the last 32 hours must be on campus. If you are a transfer student whose undergraduate work has been completed outside the West Virginia system of higher education, then you must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. You may be required to earn up to 15 hours in your major field regardless of the number of hours or the nature of the courses transferred.

### **Work Done Out of Residence**

It is WVU's policy to discourage taking regular residence courses in absentia. If you begin a course at WVU but fail to complete it due to illness or some other acceptable reason, you may receive permission to complete the work in absentia. The permission must be granted by the Academic Standards Committee of the college or school concerned, and the work must be done under the guidance of a WVU professor. Credit for the course in such cases is allowed only upon a report of a grade of C or better on the final examination. This regulation does not apply to WVU off-campus courses.

If you fail a course (receive a final grade of F) taken at WVU, you must repeat the course at WVU to receive credit for that course. The dean of the college or school in which you are enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in the your folder authorizing the exception and explaining its basis.

You should be aware of the requirements for residence and your specific degree requirements described in the catalog when transferring credit from other institutions. If you are transferring credit from institutions outside the West Virginia state system of higher education, WVU will only accept credit for courses in which you earned a grade of C or higher provided other conditions above have been met.

If you have been suspended for academic reasons and take courses at other institutions during your suspension, you cannot automatically transfer these courses to WVU upon readmission. If you complete the first semester after your suspension with a satisfactory performance (C average or better for at least 12 hours), the appropriate credit will be entered in your record. The dean of your college or school and your adviser must certify that the above conditions have been met.

### **Substitution for Required Courses**

You may want to substitute one course for another that is in your curriculum or may be required for your degree. In order to do this, you must get written permission from the Academic Standards Committee of your college or school.

## **Credits**

### **Advanced Placement Program (AP)**

West Virginia University encourages you to work to your full capacity and to earn your degree at your own learning speed. As a high school junior or senior, you can enter the University early, as previously explained, or you can take college-level courses at your school in conjunction with the College Extrace Examination Board (CEEB). The Advanced Placement Service administers three hour examinations to show competence equal to that received by taking the actual college course. The AP

table shows the subject areas, the necessary test scores, and the WVU equivalent courses. If you are a veteran, you may receive Advanced Placement for specific military experience. Veterans should contact the Director of Admissions and Records for specific information.

### **College Level Examination Program (CLEP)**

If you apply for admission to WVU and you have gained a significant level of maturity through your life experiences, you may gain college credit for these educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. A policy of the University of West Virginia Board of Trustees allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition and freshman English. Up to 34 hours of general education credit may be earned for successful performance on the CLEP General Examinations. Although this program was designed primarily for adults, exceptionally well qualified high school seniors may use the CLEP Program. If you are interested, write to the Director of Admissions and Records for additional information. The CLEP table indicates the areas in which WVU grants credit. **It should be noted that you are not eligible for CLEP credits after you have enrolled at WVU.**

### **Credit by Examination**

If you are currently enrolled, you may receive credit for a course or courses if you can demonstrate competency in the course content. The department offering the course determines evaluation standards for the student's competency. If skill and cognitive abilities are components of the course, then both are evaluated. Credit is given only when a satisfactory degree of competency is shown.

A college, school, or department may ask you to prepare a self-evaluation statement. The purpose of the statement is to determine the competency you believe you have and how you achieved it.

If you are interested in credit by examination, contact the dean in the college or school offering the course. The details and procedures will be explained at that time.

### **Credit for Correspondence Work**

You may receive credit for correspondence work in non-laboratory courses. You have to meet certain conditions that govern this credit:

- A maximum of 30 hours are acceptable.
- The work must be from accredited institutions.
- The institution must accept the credit toward its own degrees.
- WVU must ordinarily accept that institution's residence work.

### **Second or Multiple Bachelor's Degree**

To earn a second baccalaureate degree, you must earn at least 30 credits beyond the requirements for your first degree. You must satisfy all requirements, departmental or otherwise, for the second degree. You cannot receive a second bachelor's degree if you have not met the University's residence requirement. (See "Requirements as to Residence.")

If you want to earn two baccalaureate degrees at the same graduation date, then you must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. You must be admitted to both programs. Furthermore, you must provide the Office of Admissions and Records written proof that you do, in fact, have the approval of both colleges or schools.

# Advanced Placement Program

Subject	Test Score	W VU Equivalent ART:
<b>ART:</b>		
Art History .....	3	To be determined by Division of Art
BIOLOGY .....	3	Biol. 1 and 2 (3 hr.)
		Biol. 3 and 4 (1 hr.)
BIOLOGY .....	4	Biol. 15 (4 hr.)
CHEMISTRY .....	3	Chem. 15 and 16 (8 hr.)
COMPUTER SCIENCE .....	3	Non-specific C.S. 3 hr. (Test A)
		Non-specific C.S. 6 hr. (Test A & B)
<b>ECONOMICS:</b>		
Econ., Microeconomics .....	3	Econ. 54 (3 hr.)
Econ., Macroeconomics .....	3	Econ. 55 (3 hr.)
<b>ENGLISH:</b>		
English Lang. & Comp. ....	3	Engl. 1 (3 hr.)
English Lang. & Comp. ....	4 or 5	Engl. 1 and 2 (6 hr.)
Lit. & Comp. ....	3	Engl 35 (3 hr.)
Lit. & Comp. ....	4 or 5	Engl. 35 and 36 (6 hr.)
<b>FOREIGN LANGUAGES:</b>		
French Lang. ....	3	Fr. 103 and 104 (6 hr.)
French Lit. ....	3	Fr. 191 (3 hr.)
German Lang. ....	3	Ger. 103 and 104 (6 hr.)
Latin-Vergil ....	3	Class. 191A (3 hr.)
Latin-Catullus-Horace .....	3	Class. 191B (3 hr.)
Spanish Lang. ....	3	Span. 103 and 104 (6 hr.)
Spanish Lit. ....	3	Span. 191 (3 hr.)
<b>HISTORY:</b>		
European .....	3	Hist. 2 (3 hr.)
American .....	3	Hist. 52 and 53 (6 hr.)
<b>MATHEMATICS:</b>		
Math., Test AB .....	3	Math 14 (4 hr.)
Math., Test AB .....	4 or 5	Math. 15 (4 hr.)
Math., Test BC .....	3	Math 15 (4 hr.)
Math., Test BC .....	4 or 5	Math. 15 and 16 (8 hr.)
MUSIC .....	3	To be determined by Div. of Music
<b>PHYSICS:*</b>		
Phys., Test B .....	3	Phy. 1 (4 hr.)
Phys., Test B .....	4 or 5	Phy. 1 and 2 (8 hr.)
Phys., Test C .....	3	Phy. 11 (4 hr.)
Phys., Test C .....	4 or 5	Phs. 11 and 12 (8 hr.)
<b>POLITICAL SCIENCE:</b>		
American Government .....	3	Pol. Sci. 2 (3 hr.)
Comparative Government .....	3	Pol. Sci. 1 (3 hr.)

**\*NOTE:** Students receiving AP credit for any physics course will have to register for and complete the corresponding physics labs by special arrangement with the Department of Physics.

# College Level Examination Program (CLEP)

General Examinations	WVU Equivalent	Minimum Score Required
English Comp. (with essay)	English 1 (3 hr.)	590
English Comp. (multiple choice)	No credit	
Humanities	Untranslated LSP A (6 hr.)	500
Mathematics	Untranslated LSP C (4 hr.)	500
Natural Sci.	Untranslated LSP C (6 hr.)	500
Social Sci. & Hist.	Untranslated LSP B (6 hr.)	500
<b>Subject Tests:</b>		
American Lit.	Engl. 24 (3 hr.)	59
Analysis & Interpret. of Lit.	Engl. 35 (3 hr.)	59
College Comp.	No credit	
English Lit.	English 22 (3 hr.)	60
Freshman Engl.	No credit	
College French (levels 1 and 2)	Fr. 1 and 2 (6 hr.)	44
	Fr. 3 and 4 (6 hr.)	55
College German (levels 1 and 2)	Ger. 1 and 2 (6 hr.)	43
	Ger. 3 and 4 (6 hr.)	54
College Spanish (levels 1 and 2)	Span. 1 and 2 (6 hr.)	45
	Span. 3 and 4 (6 hr.)	54
American Govt.	Pol. Sci. 2 (3 hr.)	50
American Hist. I	Hist. 52 (3 hr.)	49
American Hist. II	Hist. 53 (3 hr.)	49
Western Civilization I	Hist. 1 (3 hr.)	50
Western Civilization II	Hist. 2 (3 hr.)	50
Educational Psychology	Ed. P. 103 (3 hr.)	49
General Psychology	Psych. 1 (3 hr.)	50
Human Growth and Development	CD&FS 10 (3 hr.)	51
Intro. Macroeconomics	Econ. 55 (3 hr.)	50
Intro. Microeconomics	Econ. 54 (3 hr.)	50
Intro. Sociology	Soc. & A. 1 (3 hr.)	50
College Algebra	Math. 3 (3 hr.)	48
Trigonometry	Math. 4 (3 hr.)	54
College Algebra/Trig.	Math. 14 (4 hr.)	50
Calculus with Elementary Functions	Math. 15 (4 hr.)	49
General Biol.	Biol. 1 and 2 (6 hr.)	49
	(no credit for the labs)	
General Chem.	Chem. 15 (4 hr.)	50
Computers and Data Processing	C.S. 1 (4 hr.)	49
Intro. to Management	Manag. 105 (3 hr.)	50
Intro. Accounting	Acctg. 51 and 52 (6 hr.)	54
Intro. Business Law B.	Law 111 (3 hr.)	51
Intro. Marketing	Mktg. 111 (3 hr.)	50

## Graduate Credit Via Senior Petition

You may begin graduate study early through the University's senior petition policy. Come to the Office of Admissions and Records and ask for the senior petition form. After you get the form, you must have it signed by your adviser and the chairperson of the graduate unit offering the course.

The University has certain policies for you to follow in order to enroll in a graduate course for graduate credit. The policies are:

- Senior petition applies only to courses numbered 300-399.
- You must be within 12 hours of receiving your bachelor's degree, and your grade-point average must be 3.0 on a 4.0 scale.
- You can only receive 12 graduate hours through the senior petition.
- You must have the proper signatures on your senior petition by the time you enroll in the petitioned courses.

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that you receive graduate credit for these courses on your permanent record. The dean of the college or school in which you are taking graduate courses must approve any exceptions to the policy.

**Note:** If you receive graduate credit for a course, the credit for that course does not count for your undergraduate degree.

## Visitors

Full-time University students may attend classes as visitors. To visit a class, you must have permission in writing from your adviser and the instructor of the course. A member of the administration, teaching staff, or other regular University employees may also attend classes as visitors. These individuals also must have the written permission from their department and the instructor of the class.

As a visitor, you do not receive credit for that class. You may not apply for an advanced standing examination in a class in which you were a visitor.

## Auditors

You may register for courses as an auditor and pay full fees for the course. In this situation, you do not receive credit for the course. If you audit a course in one semester, you must let one semester pass before you enroll in the course for credit. You may change your status from audit to grade or grade to audit during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The instructor may delete an auditor from a class list or grade report if attendance requirements are not met. The instructor will direct the Office of Admissions and Records to remove the auditor from the class list or grade report.

## Summer Sessions

WVU has two six-week sessions. Summer Session One begins in the middle of May and ends on June 30. Summer Session Two begins on July 1 and ends the second week of August. Requirements for admission and work performance for the summer sessions are the same as for the regular semesters.

You may earn credit toward a baccalaureate, masters, doctoral, or professional degree in the summer sessions. Summer offerings vary from year to year. For complete information concerning course offerings during the summer sessions, consult the *Summer Session Schedule of Courses*.

## Evening Classes

If you are unable to attend classes during the day, the University offers a

program of evening courses taught by regular faculty. These courses carry full college credit, and many may be counted toward graduate degrees.

## Classification of Students

WVU undergraduates are classified as freshmen, sophomores, juniors, or seniors. These classifications are based upon the number of hours completed toward the student's degree. The classifications are as follows:

Freshman classification .....	1-28 hours, inclusive
Sophomore classification.....	29-58 hours, inclusive
Junior classification.....	59-88 hours, inclusive
Senior classification.....	89 or more semester hours, inclusive

## Grade-Point Average

All academic units of the University require minimum standards of scholastic quality. Your grade-point average is computed on grades earned in courses taken at WVU and institutions in the WV system of higher education only. To be eligible to receive a baccalaureate degree, you must have a grade-point average of at least 2.0 at the time of graduation. Some degree programs require a higher grade-point average overall in the major courses. Your minimum grade-point average is based on all work for which you received letter grades other than W, WU, and P.

You must make certain that you know your grade-point standing. You can obtain the necessary information concerning your grade-point standing from the dean of your college or school. To determine your grade-point average, use the method described in the section on grade points.

## Graduation with Honors

WVU recognizes distinguished academic achievement by awarding degrees *cum laude*, *magna cum laude*, and *summa cum laude*. This distinction can be on the initial or second baccalaureate degrees. All candidates for a baccalaureate degree with a grade-point average of 3.8 or higher graduate *summa cum laude*. Those with a grade-point average of less than 3.8, but equal to or above 3.6, graduate *magna cum laude*. Those with a grade-point average of less than 3.6, but equal to or above 3.4, graduate *cum laude*.

To determine your grade-point average for honors, you must start with the penultimate (next to last) semester or summer session and continue in reverse chronological order until at least 80 graded hours excluding credits earned with a P have been counted. This work must have been completed at WVU or a school in the West Virginia system of higher education. If, in order to get the required number of hours, you have to include any part of a semester or summer session, then you must use the work of the whole semester or summer session. If it is to your advantage to do so, you may use the cumulative grade-point average on all work completed at WVU or a BOT institution to determine graduation honors. In all cases, the total hours completed must be 80 or more.

If you have not completed 80 semester hours at WVU or a BOT institution by the end of the penultimate semester, you may petition your dean for a review of your individual case. After review, the dean will forward all requests for exceptions to the regulation to the Provost for the final decision.

The recognition of graduation with honors, *summa cum laude*, *magna cum laude*, or *cum laude*, is made on your diploma, in the commencement bulletin, and on your permanent record (transcript).

If you are completing your second baccalaureate degree at the University, you are still eligible to receive the graduation honors of *summa cum laude*, *magna cum laude*, or *cum laude*. The following regulations govern these awards:

The grade-point average for graduation with honors is computed on the last 80 semester hours, excluding credits earned with a grade of P or S, completed at WVU or a University of West Virginia Board of Trustees institution.

At least 30 of the 80 hours must have been completed in the second degree program through the penultimate (next to last) semester or summer session. The remainder of the 80 semester hours count from the student's first baccalaureate degree program, counting in reverse chronological order from the semester or summer session of graduation. If, in order to total the required number of hours, it is necessary to include any part of a semester or summer session, the work of the whole semester or summer session is included.

Subject to the above conditions, second baccalaureate degrees may be awarded *summa cum laude*, *magna cum laude* and *cum laude*. If you achieve a grade-point average of at least 3.8 in both the post baccalaureate hours and the last 80 hours, you graduate *summa cum laude*. If your grade-point average is less than 3.8, but equal to or above 3.6, in both the post baccalaureate hours and the last 80 hours, you graduate *magna cum laude*. If your grade-point average is above 3.4 in both post baccalaureate hours and the last 80 hours, you will graduate *cum laude*.

The recognition of graduation with honors, *summa cum laude*, *magna cum laude*, or *cum laude*, is made on your diploma, in the commencement bulletin, and on your permanent record (transcript).

## **Academic Progress in Courses**

As a general rule, most courses taught at WVU extend for one semester, although some extend for two semesters. Credit is not awarded for a course if you do not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant an exception. Grades reported at the end of the first semester in a two semester course are merely an indication of the quality of the student's work to that point. Credit is not given for that part of the course completed. Courses taught in the summer sessions carry the same credit value as fall and spring semester courses.

## **Evaluation of Student Progress**

Your progress is evaluated by a variety of methods. The measurement and evaluation of learning are consistent with the objectives of the course and provide the opportunity for you and your instructor to evaluate your progress. The University discourages evaluation by final examination only.

You are responsible for all materials presented or assigned in scheduled instructional sections. If you do not complete all assigned work, you may earn an incomplete (I) or a failing grade (F).

The last week of each semester of the academic year is designated finals week. Final examinations for the summer sessions are given on the last day of classes. *The Schedule of Courses* gives the date and times for final examinations.

Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week. Evening classes have their final exams the last meeting of the class preceding finals week.

If you take a section of a multi-section course, you may have to take the departmental final examination. It is given during the regular final examination period.

## Grades

- A—excellent (given only to students of superior ability and attainment)
- B—good (given only to students who are well above average, but not in the highest group)
- C—fair (average for undergraduate students)
- D—poor but passing (cannot be counted for graduate credit)
- F—failure
- I—incomplete
- W—withdrawal from a course before the date specified in the University Calendar. Students may not withdraw from a course after the specified date unless they withdraw from the University
- WU—withdrawal from the University doing unsatisfactory work
  - P—pass (see Pass-Fail Grading below)
  - X—auditor, no grade and no credit
- CR—credit but no grade
- PR—progress. Final grade at end of the second semester (HSC)
  - S—satisfactory
  - U—unsatisfactory (equivalent to F)
- \*F—unforgivable F, not eligible for D/F repeat policy

## Pass-Fail Grading

Pass-fail grading encourages you to take elective courses not related to your degree concentration. Pass-fail grading also facilitates grading in competency based courses which may be an integral part of your program.

**Student Option.** Any full-time student who has completed 15 hours or more and who has maintained a 2.0 grade-point average may take a maximum of four (4) hours each semester or summer session on a pass-fail basis. Any course taken on a pass-fail basis must be a free elective. You are limited to a total of 18 hours of pass-fail credit in your collegiate career. Unless otherwise indicated, courses in your major, courses in other subjects that are required by the major, and courses taken to satisfy University, college, school, or departmental requirements are excluded from pass-fail. For example, courses elected to satisfy the English, Liberal Studies Program (LSP), or foreign language requirements may not be taken for pass-fail grading.

If you elect a course on a pass-fail basis, you are graded as a regular student. The instructor turns in the appropriate letter grade to the Office of Admissions and Records. This letter grade is then converted to a P on the basis of A, B, C, or D for a pass and F for a fail. The grade of P does not affect your grade-point average. However, any F grade affects your grade-point average whether it is a regular grade or a pass-fail grade.

You choose the option of pass-fail grading for a course during the registration period. Once the registration period has ended, you may not change the grade status in the course.

**College or School Option.** A department or unit may designate any performance or competency based course as exclusively pass-fail. To institute this, the college or school must have the approval of the Faculty Senate. Courses offered only as pass-fail are not included in the maximum of 18 hours that may be freely elected under the student option.

## Grade Points

Each letter grade has a numeric value. Grade points are based on this number value and the credit hour value of the course. The grade-point average is computed

on all work for which you registered except that courses with a grade of W, WU, P, S, and X carry no grade value.

The grade of incomplete (I) initially carries no grade value. The grade of I is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. To remove the grade of I, you do not register for the course again; instead, you arrange to submit incomplete or supplemental work to the original instructor of the course. When you receive the grade of I and later remove the incomplete grade, the grade-point average is calculated on the basis of the new grade. If you do not remove the I grade within the next semester in which you are enrolled, the grade of I becomes an F (Failure). The Academic Standards Committee of the appropriate college or school may allow you to postpone removal of the I grade if you can justify a delay.

If you are working toward teacher certification, you are responsible for every registration in a course in which the grade of A, B, C, D, F, WU, P, X, or I is received.

Students like to know how to calculate their overall and semester grade-point averages. The following example shows how to do it. Assume you are registered for 16 hours and receive the following grades in these courses:

English 1.....B.....Mathematics 3.....A  
Geology 1.....C.....Political Science 1.....B  
Spanish 1.....D.....Orientation 1.....P

Course	Credit	Grade	Grade Value	Credit X Grade Value*	Grade-Points
English 1	3	B	3	3 X 3 =	9
Geology 1	3	C	2	3 X 2 =	6
Spanish 1	3	D	1	3 X 1 =	3
Mathematics 3	3	A	4	3 X 4 =	12
Political Science 1	3	B	3	3 X 3 =	9
Orientation 1	1	P	0	1 X 0 =	0

Total Grade Points\*\* = 39

Total Credit Hours\*\*\* = 15

\*Multiply the credit value by the grade value (see table above)  
\*\*Add the Total Grade Points  
\*\*\*Divide the Total Grade Points by the credit hours that carry a grade value. 39 ÷ 15 = grade-point average

D/F Repeat Policy

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate degree. If you earn a D or F in a course at WVU taken no later than the semester or summer session registration when you reach a cumulative total of 60 hours attempted, you are eligible to D/F repeat that course. You must repeat the course at WVU. You will have only one opportunity to improve your original grade. The new grade becomes the grade that counts, even if your performance is worse than the original grade. When you have D/F repeated a course, the following happens:

1. The original grade is disregarded for the purpose of determining your grade-point average, hours passed, and hours attempted.
2. The original grade is not deleted from your permanent record.
3. The second grade is entered on your transcript and marked repeat in the semester that you repeated the course.

4. You can exercise your right under the D/F repeat policy at any time before you receive your initial baccalaureate degree (effective date: December 1985).

If you get an F in a course for disciplinary reasons or for cheating, the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on your permanent record by an \*F and is calculated in your grade-point average.

### **Grade Reports**

During the seventh week of classes in the fall and spring semesters, instructors submit a report of all undergraduate students earning grades of D or F. These grades are used for counseling and are not recorded on the student's official permanent record. These reports are sent first to the Office of Admissions and Records and then to the student, the student's adviser, and the dean of the college or school in which the student is enrolled.

Final grades are reported within 48 hours after the end of the final examination. The instructor submits the grade reports to the Office of Admissions and Records.

The final grades of all seniors provisionally approved for graduation at the close of each semester or summer session are reported to the deans of their colleges or schools. The final grades of all graduate students provisionally approved for graduation at the close of each semester or summer session are given to the Assistant Vice President for Curriculum and Instruction. Special report forms for this purpose are supplied by the Office of Admissions and Records.

At the end of each semester or at the close of each summer session, a report of each student's work is prepared for that period and sent to the student.

### **Transcripts of Academic Records**

Each transcript costs three dollars, payable in cash or money order. You may request, in person, an on-the-spot transcript at a cost of five dollars. Priority service is not available at all times. Because of demand, it may take two to three weeks to process an application for a regular transcript at the close of a semester or summer session. At other times, it is the policy of WVU to process all regular transcript requests within 48 hours of receipt of the request.

If you owe money or have some other financial obligation to any unit of the University, you forfeit your right to claim a transcript of your record until you meet your obligation. Additionally, you also forfeit the right to claim your diploma until these financial obligations have been met.

When you apply for a transcript, you must furnish your last date of attendance and your student number. Be sure to give the name under which you were enrolled.

Requests for transcripts must be made in writing to the Office of Admissions and Records. We can not accept telephone requests because of the risk of the security of your record.

### **Final Grade Appeals**

Students have the right to appeal final course grades which they believe reflect a capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, color, creed, sex, age, political affiliation, handicap, or national origin. The grade appealed shall remain in effect until the appeal procedure is completed, or the problem resolved. The primary intent of this procedure is to provide a mechanism whereby a student might appeal a failing grade or a grade low enough to cause the student to be eliminated from some program or to require the repetition of a course. Grade appeals that do not meet this classification are not precluded.

Step 1. The student shall discuss the complaint with the instructor involved prior to the midsemester of the succeeding regular semester, whether the student is enrolled or not. If the two parties are unable to resolve the matter satisfactorily, or if the instructor is not available, or if the nature of the complaint makes discussion with the instructor inappropriate, the student shall notify the chairperson of the instructor's department or division (or, if none, the dean). The chairperson or dean shall assume the role of an informal facilitator and assist in their resolution attempts. If the problem is not resolved within 15 calendar days from when the complaint is first lodged, the student may proceed directly to Step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal within 30 calendar days from when the original complaint was lodged. Copies of this document shall be given to the instructor and to the instructor's chairperson (or, if none, to the dean). If, within 15 calendar days of receipt of the student's signed document, the chairperson does not resolve the problem to the satisfaction of the student, the student will forward the complaint to the instructor's dean (see Step 3).

Step 3. Within 15 calendar days of receipt of the complaint, the instructor's dean shall make a determination regarding the grade, making any recommendation for a grade change to the instructor involved. If the instructor involved does not act on the dean's recommendation, or if the student is in disagreement with the decision of the dean, the dean will refer the case to a representative committee, appointed by the dean, for final resolution. This committee shall consist of three or more faculty members, including at least one person outside the instructor's discipline.

1. Upon receiving an appeal, the committee will notify in writing the faculty member involved of the grade challenge which shall include a statement of the facts and evidence to be presented by the student.
2. The committee shall provide to the faculty member involved and the student making the appeal written notification of their right to appear at a hearing to be held before the department or college or school representative committee, together with the notice of the date, time, and place of the hearing.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. The final decision of this committee shall be forwarded to the instructor and to the dean involved. If the decision requires a change of grade, the instructor shall take action in accordance with the committee's decision.
5. If the instructor does not act within five days, the dean shall make any necessary grade adjustment.
6. In the case of grade appeals, the dean functions as the President's designee; therefore, implementation of this decision shall end the appeal procedure.

## **Absences**

If you are absent from class for any reason, you are responsible for all work that you missed. Absences may jeopardize your grade(s) in that class or possibly the ability to continue in that course.

Instructors are responsible for keeping an accurate record of students enrolled in their classes and their attendance. If an instructor uses attendance records in determining the final grade in a course, then this fact must be announced to the students in writing within the first five class meetings.

## **Absence from Examinations**

You are required to take all regular examinations in a course. If you attend a

course all semester but you do not take the final examination and you do not have the instructor's permission to miss it, the instructor may give you a grade of zero for the examination and report a grade of F for the course. If, however, the instructor believes your absence was necessary, he/she has the option to report a grade of incomplete (I).

### **Withdrawal From Classes**

**Deadlines:** Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines are published in the University *Schedule of Courses* each semester. If you follow all established University procedures and withdraw before the published deadline, you will receive a W on your transcript. Grade-point averages are not affected in any way by this mark.

**Procedures:**

1. Before withdrawing from individual classes, consult your adviser to determine:
  - Whether your course load would be reduced below the minimum requirements set by your college or school. If so, you must get permission from the Committee on Academic Standards of your college or school before you submit the course adjustment form.
  - Whether your course load would be reduced below the minimum number of hours required to qualify for financial aid, varsity athletic competition, or international full-time student status.
  - Whether the courses to be dropped are required to fulfill academic probationary conditions.
  - Whether the courses from which you want to withdraw might be corequisite with other courses you are taking, or prerequisite to other courses required for the next term.

2. Ask your adviser to sign the University course adjustment forms and then submit the forms to the Office of Admissions and Records.

### **Withdrawal From the University**

**Deadlines:** You may withdraw from the University any time before the last day of a semester or session on which regular classes are scheduled to meet. If you withdraw before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) you receive grades of W in all of your courses for that semester or session. After these deadlines, you will receive grades of W in those courses in which you made satisfactory progress and grades of WU for courses in which your progress had been unsatisfactory.

**Procedures:**

1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all financial obligations and for following established procedures. This includes the completion of forms and the delivery of the completed forms to appropriate officials. Students not fulfilling their financial obligations may have difficulty withdrawing from the University. A withdrawal becomes official only after the forms have been recorded by the Director of Admissions and Records.
2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons still must send notification of their intention to withdraw to the

Office of Student Life. The notice should be verified in writing and the student ID and PRT cards enclosed.

3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Student Affairs office (or dean's office of an off-campus instructional unit). Withdrawal procedure is explained at that time. Identification (ID) and PRT cards must be presented.

4. With the help of their academic advisers, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

### **Academic Leave of Absence**

WVU offers undergraduate students in good standing (as defined by WVU's uniform suspension policy and not subject to disciplinary action) the opportunity to request an academic leave of absence. The academic leave of absence is designed for the student who wishes to be away from his/her academic endeavors at WVU for one or more semesters, but intends to return at a later date. The academic records of students on an academic leave of absence remain in an active status. While on an academic leave of absence, the student retains the right to use certain campus facilities such as the Reading Lab, Math Lab, Writing Lab, Student Counseling Service, and Career Services. When a student decides to return to WVU after his/her academic leave of absence, application fees are waived. While on an academic leave of absence, the student receives communications from WVU. Academic advisers and the Office of Admissions and Records can provide additional details about an academic leave and eligibility requirements.

### **Re-Enrollment After Withdrawal**

After withdrawal from WVU in two consecutive semesters (excluding summers), you may not register for further work without approval of the dean of the college or school in which you want to register and subject to conditions set by that dean.

## **Committee on Academic Standards**

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority, the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

### **Probation, Suspension, Readmission, Expulsion Policy**

#### **Uniform Probation**

Students with a cumulative grade-point average below 2.0 are notified on semester grade reports that their academic performance is unsatisfactory and that they are on probation.

A unit may require a grade-point average above 2.0 or other academic requirements for purposes of determining probation or meeting degree requirements.

### Maximum Allowable Grade-Point Deficiency\*

<i>Total Hours Attempted **</i>	<i>Maximum Grade-Point Deficiency **</i>	<i>Total Hours Attempted **</i>	<i>Maximum Grade-Point Deficiency **</i>
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	6
50-54	13		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education, excluding grades of P exclusive of the D-F Repeat Policy

### Uniform Academic Suspension Regulations

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension at any time. Normally, students are suspended at the end of a semester or summer school session. Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Suspension from the University means a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester but will not exceed one calendar year from the date of suspension.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at West Virginia University upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met. A student who has preregistered and is subsequently suspended shall have his/her registration automatically cancelled.

### Reinstatement After Suspension

During the semester immediately following the effective date of suspension, suspended students may petition in writing for reinstatement. The college or school petitioned shall establish the terms of reinstatement for successful student petitions.

After one calendar year from the effective date of suspension, any student who has been suspended one time shall, upon written application, be reinstated to the University and to the college or school in which the student was previously enrolled, unless the student petitions for admission to another college or school. The college which reinstates the student removes the student's suspension restriction in Admissions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student and that college stipulate otherwise. Each college or school shall have the right to establish requirements or performance expectations.

After the second or any subsequent suspension, a student may be reinstated to the University provided that a college or school agrees to reinstate the student. After a student has been reinstated, he/she must apply for readmission through the Office of Admissions and Records.

### **Appeal of Suspension**

Imposition of academic suspension based on grade-point average, failure to meet the conditions previously specified for removal of academic probation, or failure to meet the conditions of admission, may be appealed under the following conditions:

1. The student may appeal individual final course grades and, if successful, may be reinstated.
2. The student may make an appeal to the appropriate dean based on erroneous calculation of the grade-point average or on erroneous calculation of the time period within which a grade-point average must be achieved. The decision of the dean, as the President's designee, is final.

Students have the right to appeal academic suspensions based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, color, creed, sex, age, political affiliation, handicap, or national origin. At the dean's discretion, suspensions may remain in effect until appeal procedures are completed.

Step 1. The student shall discuss the complaint with the dean involved within 30 calendar days of the action taken. If the two parties are unable to resolve the matter satisfactorily within 15 calendar days, the student may proceed to Step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document shall be given to the University Committee on Student Rights and Responsibilities. Within 15 calendar days of receipt of the appeal, the University Committee on Student Rights and Responsibilities will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.
2. The student may be advised by a person of his/her choice from within the institution; likewise, the academic officer recommending suspension may have an adviser from within the institution. Such advisers may consult with but may not speak on behalf of their advisees or otherwise participate.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The decision of the University Committee on Student Rights and Responsibilities will be sent to the dean involved and the student within 7 calendar days of the hearing. If the decision requires a reinstatement, the dean will take action in accordance with the Committee's decision. If the decision of the Committee is to uphold the

suspension, the student's appeal must reach the appropriate Vice President within 30 calendar days of receipt of the Committee decision. The Vice President will review and make a decision regarding the suspension within 15 calendar days of receiving the student's appeal. The decision of the Vice President, as the President's designee, is final.

### **Uniform Academic Dismissal Regulations**

Academic dismissal from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University. Academic dismissal can result from repeated failure to make academic progress and/or to meet probationary terms set forth in writing by the student's college or school.

After five calendar years from the effective date of academic dismissal, any student who has been dismissed shall, upon written application, be considered for reinstatement to the University, with the terms of reinstatement to be established by the college or school entered. Failure to meet these terms will result in permanent academic expulsion.

### **Appeal of Dismissal**

*Note:* The procedures and appeals described do not apply to dismissal as a sanction for academic dishonesty.

The time limitations stated herein are suggested in order to render a decision as expeditiously as possible. In the case of University holidays or absence of person(s) involved, reasonable delays may be expected.

A decision to dismiss a student for failure to meet academic standards (as distinguished from academic dishonesty) can be made only after the student has been counseled by the appropriate departmental committee or representative, with counseling to take place as soon as possible after discovery of the problem. After the student is given a reasonable opportunity to correct deficiencies, there shall then be a formal review of the student's status by the appropriate departmental or program committee to determine whether the student shall be retained or dismissed. The student may provide the committee written documentation of his/her efforts to correct deficiencies. A committee recommendation for dismissal, including any documentation provided by the student to the committee, shall be forwarded to the student's dean and to the student. Within 15 calendar days of receipt of the committee's recommendation, the dean shall inform the student and the student's department/program of his/her decision. A decision to dismiss shall specify whether the dismissal is from the program or college/school. The dean may also dismiss a student from the institution if the student does not meet institutional standards.

Dismissal, based on grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution:

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the appropriate Vice President within 15 calendar days of failure to resolve the matter at the dean's level. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. The decision of the Vice President, as the

President's designee, shall be rendered within 15 days of receipt of the student's appeal and is final.

Dismissal, based on failure to meet academic requirements or performance standards irrespective of grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution. Students have the right to appeal academic dismissal based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, color, creed, sex, age, political affiliation, handicap, or national origin.

Step 1. The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

Step 2. The student will forward a copy of the appeal to the University Committee on Student Rights and Responsibilities, which, within 15 calendar days of receipt of the student's appeal, will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of date, time, and place of hearing.

2. The student may be advised by a person of his/her choice from the institution; likewise, the academic officer recommending academic dismissal may have an adviser from the institution. Such advisers may consult with but may not speak on behalf of their advisees or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.

3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.

4. Witnesses may be called by any of the parties involved.

5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within seven days. The University Committee on Student Rights and Responsibilities' recommendation for dismissal must be reviewed by the appropriate Vice President, who may confirm or remand the recommendation with specific instructions. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. Within 15 calendar days of a recommendation for dismissal confirmed by the Vice President, the student may appeal to the President. The decision of the President is final.

### **Academic Dishonesty**

The academic development of students and the overall integrity of the institution are primary responsibilities of WVU. Academic dishonesty is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

## **Responsibilities**

Students should act to prevent opportunities for academic dishonesty to occur, and in such a manner to discourage any type of academic dishonesty.

Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and public safety officers, shall promptly report each known case of academic dishonesty to the appropriate supervisor, department chairperson, or dean of the college or school concerned.

## **Academic Dishonesty Defined**

West Virginia University expects that every member of its academic community shares the historic and traditional commitment to honesty, integrity, and the search for truth. Academic dishonesty is defined to include but is not limited to any of the following:

1. **Plagiarism:** To take and pass off as one's own the ideas, writings, artistic products, etc. of someone else; for example, submitting, without appropriate acknowledgement, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part, from the work of others, whether such source is published, including (but not limited to) another individual's academic composition, compilation, or other product, or commercially prepared paper.

2. **Cheating and dishonest practices in connection with examinations, papers, and projects, including but not limited to:**

- a. Obtaining help from another student during examinations.
- b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his/her own.
- c. The unauthorized use of notes, books, or other sources of information during examinations.
- d. Obtaining without authorization an examination or any part thereof.

3. **Forgery, misrepresentation or fraud:**

- a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.
- b. Use of University documents or instruments of identification with intent to defraud.
- c. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.
- d. Knowingly presenting false data or intentionally misrepresenting one's records for personal gain.
- e. Knowingly furnishing the results of research projects or experiments

- f. Knowingly furnishing false statements in any University academic proceeding.

### **Procedure for Handling Academic Dishonesty Cases**

Academic dishonesty includes plagiarism; cheating and dishonest practices in connection with examinations, papers, and projects; and forgery, misrepresentation, and fraud. Some cases of forgery, misrepresentation, or fraud which occur outside the context of courses or academic requirements may be referred directly to the University Committee on Student Rights and Responsibilities by any member of the University community. In such cases, the University Committee on Student Rights and Responsibilities will arrange a hearing following the procedure outlined in Step 3 within 15 calendar days of receipt of the charges.

Step 1. If a student is charged with academic dishonesty, the instructor will contact the student in person and/or notify the student in writing of the specifics of the charge within 15 calendar days of the discovery of the offense. The student must respond within 5 calendar days of the receipt of the notification. If the instructor determines the student is guilty, the maximum penalties the instructor may administer are exclusion from the course, a lower grade, and/or an unforgiveable F (not eligible for D/F repeat policy) in the course. The instructor and/or the department chairperson also may recommend to the dean of the college in which the course is offered that additional penalties be imposed on the student. At the discretion of the faculty member or department chairperson, in cases where there is written admission of guilt by the student, the case may be satisfactorily resolved at the departmental level. Whenever a penalty is administered, the facts of the case shall be reported in writing to the dean of the college or school and a copy forwarded to the Office of Judicial Programs for the permanent records. In cases wherein academic dishonesty occurs in a college or school other than that in which the student is enrolled, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.

Step 2. If the student denies guilt, if the student believes the penalty imposed in Step 1 is unjust, or if the instructor and/or department chairperson determines the penalties available at Step 1 are insufficient for a specific act, the dean of the college or school in which the course is offered shall be notified in writing of the specifics of the case. The dean shall then implement the following steps within 15 calendar days of receipt of notification:

1. Formal notification to the faculty member that the student is appealing the penalties imposed in Step 1, or formal notification to the student and faculty member of the charges and nature of evidence which, if proved, would justify additional action.

2. Opportunity for the student, faculty, and witnesses to respond or present evidence in writing to the charges.

3. Review by the dean of the facts and evidence presented, and a determination of the penalty or action, if any, to be applied.

Step 3. If the student wishes to appeal the decision of the dean, the appeal must reach the University Committee on Student Rights and Responsibilities within 30 calendar days of the student's receipt of the dean's decision. The University Committee on Student Rights and Responsibilities will arrange a hearing within 15 calendar days using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.

2. The student may be advised by a person of his/her choice from within the

institution; likewise, the academic officer recommending the additional action may have an adviser from within the institution. Such advisers may consult with, but may not speak on behalf of their advisees, or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.

3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.

4. Witnesses may be called by any of the parties involved.

5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of those involved upon written request. The University Committee on Student Rights and Responsibilities will reach a decision within 7 days of the hearing. If the University Committee on Student Rights and Responsibilities finds the student guilty, it will determine the penalty it deems appropriate under the circumstances and inform all parties involved. The penalty imposed cannot be more severe than the penalty imposed by the dean.

Step 4. Only sanctions of suspension or dismissal invoked or upheld by the University Committee on Student Rights and Responsibilities may be appealed to the President or his/her designee. Such appeals must reach the President's Office within 30 calendar days after receipt of written notice of the decision of the University Committee on Student Rights and Responsibilities. The decision of the President or the President's designee is final.

## **Fees and Expenses**

### **Fee Regulations**

All West Virginia University fees are subject to change.

All fees are due and payable to the Controller on the days of registration. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair.

All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University.

No student will be permitted to register at the University after the eighth day of a semester or the fourth calendar day of the summer sessions or a single summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$20.00.

Registering students pay the fees shown in the fee charts, plus special fees and deposits as required.

No degree is conferred upon any candidate and no transcripts are issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

It is the policy of West Virginia University to place on restriction students who have outstanding debts to a unit or units of the University. The restriction may include, but is not limited to, the withholding of a student's registration, a student's diploma, or a student's transcript.

## Financial Aid

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools, from the College Scholarship Service, or the WVU Financial Aid Office. Forms are dated for the appropriate academic year.

*Your Guide to Financial Aid—West Virginia University* is available at the WVU Financial Aid Offices, Mountainlair, Downtown Campus, and 104 Health Sciences Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus courses are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay a \$40.00 course fee for each off-campus course taken.

## Special Fees

Application for Undergraduate Admission.

(Resident)	\$10.00
(Nonresident)	20.00

Application for Admission (Dentistry and Medicine) 30.00

Application for Admission (College of Law or Graduate Studies) 25.00

Certificate of Advanced Study in Education 2.00

Diploma Replacement 20.00

Examination for Advanced Standing 35.00

Examination for Entrance Credit, per unit 1.00

General Educational Development Tests (high school level) 15.00

(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)

Graduation 20.00

(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)

Late Registration (nonrefundable) 20.00

(Not charged to students who complete registration during the regular registration days set forth in the University Calendar.)

Non-Enrolled Graduate Student Evaluation Fee 50.00

(For graduate students not otherwise enrolled at time of final exam.)

Professional Engineering Degree (includes \$20.00 Graduation Fee) 35.00

Program Reactivation Fee (Graduate Students) 20.00

Reinstatement of Student Dropped from the Rolls 10.00

Student Identification Card Replacement 10.00

Student's Record Fee 3.00

(Priority transcript available at the rate of \$5.00.).

## Laboratory Fees

Consult specific departmental sections of this catalog concerning nonrefundable deposits and microscope rental fee.

**Service Charge on Returned Checks**

A service charge of \$10.00 is collected on each check returned unpaid by the bank upon which it was drawn. If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid. Registration is cancelled if the check is not redeemed within three days from date of written notice. In such a case the student may be reinstated when he/she redeems the check, pays the \$10.00 service charge, the \$10.00 reinstatement fee, and the \$20.00 late payment fee.

Summer Tuition and Fees		
Tuition, per semester hour	Resident	Nonresident
Undergraduate Students	\$53.00	\$172.00
Daily Athenaeum Fee*	2.00	2.00
Radio Station Fee*	2.00	2.00
Health, Counseling, and Program Services Fee	29.00	29.00
Mountainlair Construction Fee per 6-week summer session or any portion thereof*	15.00	15.00
Student Affairs Fee	10.00	10.00
Transportation Fee	17.00	17.00

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.).

**Non-Sufficient Funds Check Policy**

Payments of tuition, fees, and other charges by check are subject to WVU's Non-Sufficient Funds Check Policy. A copy of the policy is available in the Bursar's Office.

**Refunds**

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Controller evidence of eligibility for a refund during the semester.

To withdraw officially, a student must apply to the Division of Student Affairs for permission. Semester fees will be returned in accordance with the following schedule:

Academic Year (Semester) .....	Refund
During the first and second weeks .....	90%
During the third and fourth weeks .....	70%
During the fifth and sixth weeks .....	50%
Beginning with the seventh week .....	No Refund

**Summer Sessions and Non-Traditional Periods**

Refunds for summer sessions and non-traditional periods are established based upon the refund rate for the academic year. For specific information concerning summer session refunds, see the appropriate *Summer Schedule of Courses*. Should the percentage calculation identify a partial day, the entire day will be included in the higher refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United

## Estimated Expenses For Health Sciences Center Programs Per Semester

These estimated expenses are accurate as of Feb. 1, 1991 and are **subject to change**.  
For current accurate tuition costs, please call Admissions and Records at 1-800-344-WVU1.  
Tuition and registration are the same for both semesters. Some expenses, such as instruments and books, are different for the second semester.

School or Division	Tuition and Registration Fees (Totals from page 36)		Instruments	Lab Coats, Uniforms etc.	Books	Total	
	Resident	Nonresident				Resident	Nonresident
<b>Dental Hygiene</b>							
Freshman	\$1,047.50	\$2,652.50	\$ 285.00	\$ 25.00	\$225.00	\$1,582.50	\$3,187.50
Sophomore	1,047.50	2,652.50	1,000.00	225.00	255.00	2,527.50	4,132.50
Junior	1,047.50	2,652.50	660.00	100.00	425.00	2,232.50	3,837.50
Senior	1,047.50	2,652.50	675.00	100.00	200.00	2,022.50	3,627.50
<b>Dentistry</b>							
First Year	1,655.50	3,779.50	3,700.00	88.00	740.00	6,183.50	8,307.50
First Year Summer	690.00	1,545.00	3,000.00		216.08	3,906.08	4,761.08
Second Year	1,655.50	3,779.50	3,000.00	110.00	205.00	4,970.50	7,094.50
Second Year Summer	690.00	1,545.00	500.00		16.12	1,206.12	2,061.12
Third Year	1,655.50	3,779.50	500.00		80.00	2,235.50	4,359.50
Third Year Summer	690.00	1,545.00				690.00	1,545.00
Fourth Year	1,655.50	3,779.50	500.00			2,155.50	4,279.50
<b>Medical Technology</b>							
Junior	1,047.50	2,652.50	159.00	250.00	500.00	1,956.50	3,561.50
Summer	242.00	662.00		250.00	500.00	692.00	1,112.00
Senior	1,047.50	2,652.50		225.00		1,272.50	2,877.50

## Estimated Expenses For Health Sciences Center Programs Per Semester (continued)

These estimated expenses are accurate as of Feb. 1, 1991 and are **subject to change**.

For current accurate tuition costs, please call Admissions and Records at 1-800-344-WVU1.

Tuition and registration are the same for both semesters. Some expenses, such as instruments and books, are different for the second semester.

School or Division	Tuition and Registration Fees (Totals from page 36)		Instruments	Lab Coats, Uniforms etc.	Books	Total	
	Resident	Nonresident				Resident	Nonresident
<b>Medicine</b>							
First Year	\$2,727.50	\$4,932.50	\$ 225.00	\$ 50.00	\$250.00	\$3,252.50	\$5,457.50
Second Year	2,727.50	4,932.50	420.00	50.00	235.00	3,432.50	5,637.50
Third Year	2,727.50	4,932.50	—	—	200.00	2,927.50	5,132.50
Third Year Summer	58.50	58.50	—	—	—	58.50	58.50
Fourth Year	2,727.50	4,932.50	—	—	150.00	2,877.50	5,082.50
Fourth Year Summer	117.00	117.00	—	—	—	117.00	117.00
<b>Nursing</b>							
Sophomore	1,047.50	2,652.50	40.00	200.00	750.00	2,037.50	3,642.50
Summer	377.00	1,008.00	—	50.00	150.00	577.00	1,208.00
Junior	1,047.50	2,652.50	—	50.00	300.00	1,397.50	3,002.50
Senior	1,047.50	2,652.50	—	—	300.00	1,347.50	2,952.50
<b>Pharmacy</b>							
Third Year	1,177.50	2,927.50	75.00	35.00	250.00	1,537.50	3,287.50
Fourth Year	1,177.50	2,927.50	—	—	200.00	1,377.50	3,127.50
Summer	1,075.00	\$2,880.00	—	—	—	1,075.00	2,880.00
Fifth Year	1,177.50	\$2,927.50	—	35.00	100.00	1,312.50	3,062.50
<b>Physical Therapy</b>							
Junior	1,047.50	2,652.50	90.00	90.00	500.00	1,727.50	3,332.50
Summer Rotation	23.00	23.00	—	—	—	23.00	23.00
Senior	1,047.50	2,652.50	—	70.00	500.00	1,617.50	3,222.50
Summer Rotation	46.00	46.00	—	—	—	46.00	46.00
Fall Rotation	58.50	58.50	—	—	—	58.50	58.50

## **Section 5. Military**

5.1 An individual who is on full-time active military service in another state or foreign country or an employee of the federal government shall be classified as an in-state student for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

5.2 Persons assigned to full-time active military service in West Virginia and residing in the State shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

## **Section 6. Aliens**

6.1 An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 2 may be eligible for in-state residency classification, provided that person is in the State for purposes other than to attempt to qualify for residency status as a student. Political refugees admitted into the United States for an indefinite period of time and without restriction on the maintenance of a foreign domicile may be eligible for an in-state classification as defined in Section 2. Any person holding a student or other temporary visa cannot be classified as an in-state student.

## **Section 7. Former Domicile**

7.1 A person who was formerly domiciled in the state of West Virginia and who would have been eligible for an in-state residency classification at the time of his/her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one year period of time and satisfies the conditions of Section 2 regarding proof of domicile and intent to remain permanently in West Virginia.

## **Section 8. Appeal Process**

8.1 The decisions of the designated institutional officer charged with the determination of residency classification may be appealed to the President of the institution. The President may establish such committees and procedures as are determined to be appropriate for the processing of appeals. The decision of the President of the institution may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board.

# Graduate Programs in Basic Sciences

George A. Hedge, Chairperson of the Health Sciences Graduate Council

## Degrees Offered by the School of Medicine

Doctor of Philosophy and Master of Science in:

Anatomy

Biochemistry (Medical)

Microbiology and Immunology (Medical)

Pharmacology and Toxicology

Physiology

Doctor of Philosophy in Biomedical Sciences, awarded in conjunction with Marshall University

## Nature of Program

Graduate degrees are offered by the School of Medicine and the Departments of Anatomy, Biochemistry, Microbiology and Immunology, Pharmacology and Toxicology, and Physiology. Brief guidelines and descriptions of these programs are found in this catalog. For more detailed presentation of graduate programs, as well as the policies and rules governing graduate education, the graduate catalog should be consulted.

## Health Sciences Center Graduate Council

The Health Sciences Center Graduate Council advises the Vice President for Health Sciences. In this role the Council monitors and administers the graduate studies policies of the schools located at the Health Sciences Center. The membership of the Council includes George A. Hedge (chairperson), Charles R. Craig and Irvin S. Snyder of the School of Medicine, James Overberger of the School of Dentistry, Janet Wang of the School of Nursing, and David Lalka of the School of Pharmacy.

## Application and Admission

Prospective graduate students are urged to initiate application for admission as early as possible. The first step of a student interested in a degree program should be to ask for information from the department, division, school, or college offering the program desired; the reply to such an inquiry will include instructions for applying to the particular program.

In all cases, application must be made for admission to graduate study on standard forms provided by the WVU Office of Admissions and Records. The completed form is to be returned to the Office of Admissions and Records, and must be accompanied by payment of a nonrefundable special service fee of \$25.00. Applicants must at the same time request the registrar or records office of the college of their baccalaureate degree to send an official transcript directly to the Office of Admissions and Records. If other institutions have been attended in the course of undergraduate or graduate study, transcripts should be requested from them as well. No one is admitted to graduate study who does not hold a baccalaureate degree.

If the applicant meets the minimum admission requirements of WVU, a copy of the application is forwarded to the faculty of the program of interest. Any graduate degree program is permitted to set admission requirements which go beyond the minimum admission standards of the University. No one can pursue an advanced degree at WVU unless admitted to the appropriate degree program.

## Reapplication

When a student graduates or completes the program A for which he/she applied, the student must reapply and be readmitted before taking further course work at WVU. This policy assures that the University is informed of the student's objectives and that he/she is assigned an appropriate adviser. Students will be assessed the application fee for each new application.

When eight years have passed since initial course work, a student must reapply. The application fee will be assessed.

## Classification of Graduate Students

**Regular:** A regular graduate student is a degree-seeking student who meets all the criteria for regular admission to a program of his/her choice. The student must possess a baccalaureate degree from a college or university, must have at least a grade-point average of 2.5 (on a 4.0 scale), have met all the criteria established by the degree program, and be under no requirements to make up deficiencies.

**Provisional:** A student may be admitted as provisional by any unit when the student possesses a baccalaureate degree but clearly does not meet the criteria for regular admission. The student may have incomplete credentials, deficiencies to make up, or may have an undergraduate scholastic record which shows promise, but is less than the 2.5 grade-point average required for regular admission.

**Non-Degree:** A non-degree student is a student not admitted to a program. Admission as a non-degree student does not guarantee admission to any course or program. To be admitted as a non-degree student, a student must only present evidence of a baccalaureate degree, but the student must obtain a 2.25 grade-point average on the first 12 credit hours of course work and maintain this average as long as enrolled. To be eligible to enter a degree program, the student must maintain a minimum of a 2.75 grade-point average on all course work taken since admission as a graduate student.

## Reclassification: Provisional to Regular:

a. The provisions of a student's provisional status must be specified in the letter of admission.

b. To be reclassified as a regular student, a student must meet the provisions stated in the letter of admission and achieve a minimum grade-point average of 2.75 on all course work taken during the provisional period. Individual degree programs may set higher grade-point average requirements.

c. No later than the completion of the 18th credit hour, a unit must review the student's record and make a final decision on the student's admission. A student who has met the provisions of admission and achieved the required grade-point average will be reclassified as a regular student. A student who fails to meet the provisions of admission or who fails to achieve the required grade-point average will be suspended but may be reinstated in order to transfer to another program or to non-degree status. The academic unit must notify the student and the Office of Admissions and Records of its decision.

d. Upon notification by the appropriate academic unit, the Office of Admissions and Records will prohibit the registration of all provisional graduate students who have reached the maximum of 18 credit hours. Registration will not be permitted until the student is reclassified as a regular student, an exception is granted by an academic dean, or the student is transferred.

e. A student may be admitted as a provisional graduate student more than one time, but not to the same graduate program.

f. All credit hours taken since admission as a provisional graduate student or to be applied to a degree count in the 18 credit-hour limit, i.e., undergraduate or graduate credit, P/F or S/U graded courses, credit by senior petition, and transfer credit.

### **Regular or Provisional to non-degree**

a. Regular and provisional students may become non-degree students by choice, including those students who fail to meet admission or academic standards or who withdraw voluntarily.

b. To change a student to non-degree status, the adviser must process a Graduate Studies Transfer/Status form through the Health Sciences Center Graduate Programs Office.

### **Non-Degree to Regular or Provisional:**

a. Non-degree students who later wish to become degree candidates must transfer and present all the credentials required by the degree program. This change requires the processing of a Graduate Studies Transfer/Status form by the student's adviser through the Health Sciences Center Graduate Programs Office.

b. For admission to a degree program, a non-degree student must have achieved a minimum grade-point average of 2.75 on all course work taken since admission as a graduate student.

### **Graduate Record and Other Examinations**

Many programs at WVU require Graduate Record Examination (GRE) scores from all applicants, but in no program are they the sole criterion for admission. Some programs require both the general aptitude and the appropriate advanced test before considering an applicant for admission. All departments in the School of Medicine require that a student take the GRE test. The School of Pharmacy also requires a student have the GRE.

### **Admission of International Students**

International students wishing to enroll for graduate work at WVU must comply with the stated academic requirements for admission and with certain additional academic and nonacademic requirements.

**Early Inquiry and Application :** International applicants should forward a letter of inquiry one year before the intended time of beginning study in the United States.

**English Proficiency:** All international applicants, whose family language and schooling were other than English, must present a composite score of at least 550 on the "Test of English As a Foreign Language" (TOEFL).

**Credentials :** See the *WVU Graduate Catalog*.

### **Intrauniversity Transfers**

To transfer from one school or department to another, a student may initiate a transfer request by contacting the Health Sciences Center Graduate Programs Office or his/her adviser. The adviser must contact the Health Sciences Center Graduate Programs Office, which will complete the transfer.

### **Credits**

Credit toward a graduate degree may be obtained only for courses listed in the graduate catalog, and numbered 200-499, in which the grade earned is A, B, C, or S. No course in which the grade earned is D, P, F, or U can be counted toward a graduate degree.

## **Employed Graduate Students**

Graduate students will be required by their advisers to limit their credit loads in proportion to the outside service rendered and the time available for graduate study. In general, persons in full-time service to the University, or other employer, will be advised to enroll for no more than six hours of work in any one semester and those in half-time service for no more than 12 hours. Maximum credit loads may be lower for employed graduate students in some academic colleges, schools, and departments.

## **Non-Degree Graduate Students**

A non-degree graduate student may accumulate unlimited graduate credit hours, but if the student is later admitted to a degree program, the faculty of that program will decide whether or not any credit earned as a non-degree student may be applied to the degree. Under no circumstances may a non-degree student apply more than 12 hours of credit toward a degree.

## **Transfer or Transient Credit**

To apply graduate-level credits from other institutions toward a master's degree at WVU, students must get permission from the individual schools or colleges. The standardized transient application form must be approved and signed by a unit chairperson or designate, prior to the student enrolling in the course(s) to be transferred to WVU. The school or department submits the approved form to the Health Sciences Center Graduate Programs Office for final approval and submission to Admissions and Records. It is the students responsibility to see that Admissions and Records gets an original transcript from the other institution. Only credit earned at institutions accredited at the graduate level may be transferred.

Graduate courses taken elsewhere will not be approved for transfer credit unless the transient application form was approved before enrolling in them. When a school or department approves the form, it is forwarded to the Health Sciences Center Graduate Programs Office for approval. A maximum of 12 semester hours from other institutions will be accepted for credit at WVU in master's degree programs requiring 30 to 41 semester hours. Eighteen semester hours will be accepted for master's degree programs requiring 42 or more semester hours. Individual graduate programs may accept fewer credit hours.

## ***Time Limits***

**Master's Degree:** All requirements for a master's degree must be completed within eight years preceding the student's graduation.

**Doctorate:** The doctorate is a research or performance degree and does not depend on the accumulation of credit hours. The three requirements of the degree are admission to candidacy, residency, and completion and defense of the dissertation. The degree signifies that the holder has the competence to function independently at the highest level of endeavor in the chosen profession. Hence, the number of years involved in attaining or retaining competency cannot be readily specified. Rather, it is important that the doctoral student's competency be assessed and verified in a reasonable period of time prior to conferral of the degree.

The qualifying examination is the method of assessing whether the student has attained sufficient knowledge of the discipline and supporting fields in order to undertake independent research or practice. It is expected that the examination will occur after all course work has been completed and language or other requirements are satisfied. It consists of a series of examinations covering all areas specified in the plan of study. After the component parts of the qualifying examination have been

successfully passed, the student is admitted to candidacy for the degree. It is sometimes called the candidacy examination because no one can be called a doctoral candidate until this first requirement for the degree has been met.

Because the qualifying examination attests to the academic competence of the student who is about to become an independent researcher or practitioner, the examination should not precede the degree by too long a period of time. Consequently, doctoral candidates are allowed no more than five years in which to complete remaining degree requirements. In the event a student fails to complete the doctorate within five years after admission to candidacy, an extension of time can be obtained only by repeating the qualifying examination and meeting any other requirements specified by the student's committee.

### **Contractual Nature of Graduate Study**

The student's rights, privileges, obligations, and responsibilities are contained in the graduate catalog, the plan of study, and, if research is one of the degree program requirements, the prospectus. Although not contracts in the formal legal sense, they are agreements between the University and a student for the accomplishment of planned educational goals.

### **Plan of Study**

The plan of study is submitted within the first academic year (18 hours for a master's and 30 hours for doctorate/after thesis committee for Nursing) to the Health Sciences Center Graduate Programs Office. The plan of study is subject to approval and is made a part of the student's record. It then becomes a formal agreement between student and program faculty as to the conditions which must be met for completion of the degree requirements. Any subsequent changes in plan of study (or prospectus) can be made only through mutual agreement, with a memorandum of changes sent to the Health Sciences Center Graduate Programs Office.

### **Records**

The Health Sciences Center Graduate Programs Office maintains all records for monitoring student progress and for certifying students for graduation. Among these records are plans of study (subject to the approval of the chairperson of Health Sciences Center Graduate Council); graduate committees (subject to school dean's or designate's approval and approval of the Health Sciences Center Graduate Programs Office); grades; grade modifications, etc.

### **Grading**

Pass/fail grading is not applicable to the course work for a graduate degree. A graduate student may register for any course (1-499) on a pass/fail basis only if the course involved is not included in the student's plan of study and does not count toward a graduate degree. The selection of a course for pass/fail grading must be made at registration and may not be changed after the close of the registration period. A student who, having taken a course on a pass/fail basis, later decides to include the course as part of a degree program must re-register for the course on a graded (A, B, C, D, or F) basis.

### **Incompletes**

The grade of I is given when the instructor believes the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within one academic year or made a permanent incomplete. Grade

modification forms are to be signed by the instructor of the course, and then brought to the Health Sciences Center Graduate Programs Office for processing.

Grade changes other than I (incomplete) to a letter grade must be accompanied by an explanatory memo. **Procedural rules and dissertations are found in the WVU Graduate Catalog.**

## **Dismissal**

Dismissal from a graduate or professional program may be based on program and/or professional performance standards other than cumulative grade-point average. Reasons must be based on catalog and other written documents describing academic and professional performance standards and expectations.

Procedures:

1. Counseling by departmental committee or representative as soon as possible after discovery of problem.
2. Second counseling by departmental committee or representative after opportunity to improve if performance is not changed sufficiently.
3. Formal review of student status by department or program committee. The formal review will result in one of the following actions:
  - a. Student retained or recommended for dismissal.
  - b. Counseling or remediation steps required as a condition of retention.
  - c. Appeals available if dismissal recommended.
4. A dismissal decision by the dean of the student's school or college may be appealed to the University Conduct/Appeals Committee, which will hold a hearing using the following procedures:
  - a. The student may be advised by a person of his/her choice to assure due process protection not to affect the outcome of the proceedings. The adviser may consult with the student but shall not speak on behalf of the student or participate directly unless granted specific permission by the University Conduct/Appeals Committee.
  - b. The formal rules of evidence do not apply.
  - c. The administrative procedure is not adversarial in nature.
  - d. Witnesses may be presented and examined under oath.
  - e. An accurate record of the procedure is to be kept. The student may request a transcript of the proceedings at the student's expense.
  - f. An academic appeals committee has the right to counsel in those proceedings in which the student has retained counsel. Such counsel may not speak on behalf of the institution or otherwise participate directly in the proceedings.
5. A decision for dismissal must be reviewed by the appropriate academic vice president, who may confirm or remand the recommendation with specific instructions.
6. Recommendation for dismissal confirmed by the appropriate academic vice president may be appealed to the president of the University. The decision of the president is final.

## **Students' Committees**

Doctoral dissertation committees will consist of no fewer than five members, the majority of which, including the chairperson, will be regular graduate faculty. No more than one person may be a non-member.

Master's committees of programs requiring a thesis will consist of no fewer than three members, the majority of which will be regular graduate faculty including the chairperson. No more than one person may be a non-member. Master's committees of programs not requiring a thesis will consist of no fewer than three members, one of

which must be a regular graduate faculty member. No more than one person may be a non-member, and the non-member cannot chair or advise.

Committee approval must be obtained prior to the second semester for master's degree and prior to the fourth semester for the doctorate. Committee approval for the nursing program is obtained after the third semester.

### **Committee Approval**

All graduate committees are subject to the approval of the school dean or designate and the Health Sciences Center Graduate Programs Office.

## **Anatomy**

Richard C. Wiggins, Chairperson of the Department

William Beresford, Graduate Coordinator

Degrees Offered: M.S., Ph.D.

Graduate Faculty: Members Blaha, Cilento, Culberson, Dey, Hilloowala, Kirk, Konat, Overman, Pinkstaff, Reilly, Reyer, Salm, Walker, and Wiggins. Associates Beresford, Friedman, Pope and Sorg.

The Department of Anatomy in the School of Medicine offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program includes instruction in basic morphological, developmental, and functional aspects of human anatomy. Selected courses strengthen the area of interest of the student. The student conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.)

### **Admission Requirements**

In addition to the admission procedure of the University, the Department of Anatomy requires that each applicant complete a departmental application form obtained from the department. After an application is favorably reviewed by the departmental graduate studies committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by the decision of the chairman, the director and admissions officer of the graduate program in consultation with the departmental graduate faculty. It is recommended that the following courses be completed before entering the graduate program: algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants desiring consideration for financial aid should complete the application process as early as possible.

### **Doctor of Philosophy (Ph.D.)**

The first year of study consists mostly of course work within the Department of

**Anatomy.** These courses include neurobiology, gross anatomy, microanatomy, introduction to research, and seminar in anatomy. A combination of courses in other basic medical sciences, such as biochemistry, physiology and pathology, and advanced anatomy courses is chosen to meet the individual need. Students are in good standing while a minimum of a 3.0 overall grade-point average is maintained.

To be admitted to candidacy for the Ph.D. degree, the student must pass the preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree, each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an advisory committee that is composed of faculty members selected by the student. The student usually culminates the training period with presentations at scientific meetings.

### **Master of Science (M.S.)**

The master's program in anatomy is offered as a terminal degree primarily for students in certain specialized fields, such as physical therapy, or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D. An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants from the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy and six to nine hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work, the student must complete a thesis based on original research and defend the thesis at an oral comprehensive examination.

### **Research and Instruction**

**Molecular and Developmental anatomy:** experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration, and the effects of drugs and other environmental agents on development.

**Microscopic anatomy:** studies of cells, tissues and organs, under normal and experimental conditions with in vivo microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques;

**Gross anatomy:** anatomical variations and anomalies, and electromyographic studies of specific muscle groups.

**Neuroanatomy:** experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

### **Anatomy (Anat.)**

301. *Gross and Developmental Anatomy:* Trunk. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum emphasizing clinically-related concepts.

302. *Gross and Developmental Anatomy:* Head-Neck. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 3 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the head and neck emphasizing clinically-related concepts.

304. *Gross and Developmental Anatomy: Extremities.* (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) 2 hr. PR: Medical student standing or consent of chairperson. Gross anatomical and developmental study of the upper and lower limbs emphasizing clinically-related concepts.
305. *Microanatomy.* (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.
308. *Neuroanatomy.* (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system.
309. *Microanatomy and Organology.* (For dental students and limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.
312. *Special Topics in Anatomy.* I, II. 2-4 hr. per. sem. PR: Anat. 301 or 324; and Anat. 305 or 309; consent of chairperson. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy.* I, II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
316. *Craniofacial Growth and Maturation.* I. 1 hr. PR: Consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.
318. *Oral Histology and Embryology.* (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.
319. *Advanced Head and Neck Anatomy.* II. 1 hr. PR: Dental, medical, or graduate student, or consent. Advanced head and neck craniofacial embryology and related functions as they apply to specialties in dental or medical practice.
324. *Human Gross Anatomy.* (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 7 hr. PR: Dental student standing or consent of chairperson. Human anatomy including cadaver dissection for dental students.
401. *Advanced Gross Anatomy.* I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 324, and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy.* II. 2-4 hr. per sem. PR: Anat. 301, 302, 304 and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar.* I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology.* II. (Alternate Years.) 3 hr. PR: Embryology and cellular physiology and biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.

406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CCMD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques. (Offered in odd numbered years.)
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairperson. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
490. *Teaching Practicum I and II*. 1-3 hr. Consent of chairperson. Supervised practice in college teaching of anatomy. Graded a S or U.
491. *Advanced Anatomy*. I, II. 1-6 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed, with permission.)

## Biochemistry

Diana Beattie, Ph.D., Chairperson

Kurt Vrana, Graduate Coordinator

Degrees Offered: M.S., Ph.D.

Graduate Faculty: Members Beattie, Butcher, Canady, Challoner, Durham, Evans, Harris, Jagannathan, Miller, Rafter, Shiemke, Tryfiates, Vrana, Wimmer, and Wirtz.

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry.

## Admission Requirements

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed courses in qualitative-quantitative chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission into the program.

Application is made by submission of the following items to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's present abilities and potential; (c) official transcript of the applicant's college grades; and (d) official copy of Graduate Record Examination scores. Owing to the sequence of courses, entrance in the fall is preferred, but exceptions may be made as necessary. Application material and program details may be obtained by writing: The Graduate Coordinator, Department of Biochemistry, School of Medicine, West Virginia University, Morgantown, WV 26506. The deadline for receipt of applications and supporting documents by the department is April 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1.

## Doctor of Philosophy

To assure that all students become familiar with the basic principles of biochemistry, the first year of the Doctor of Philosophy (Ph.D.) program is devoted primarily to course work. In addition to formal courses during the first semester, students participate in a laboratory program which involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice.

Upon successful completion of the first year, students will choose a dissertation research adviser, at which time emphasis will be placed on research. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, and a few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate; thus students learn to effectively organize and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the research results to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

## Master of Science

The Department of Biochemistry offers the thesis master's degree. This program involves completion of a master's research project in addition to formal course work. Two to three years are generally required to complete the M.S. program.

## Research

Hormonal regulation of metabolism. Regulation of gene expression. Structure and function of nucleic acids. Chemistry of enzymes and serum proteins. Structure of connective tissue. Nutritional oncology. Secretory mechanisms. Biogenesis of membranes.

## Biochemistry (Bioch.)

139. *Introduction to Biochemistry*. I. 4-5 hr. PR: General chemistry. (For medical technology and pharmacy students; others by consent.) Lecture and conference, 4 hr.; Laboratory/demonstration, 1 hr.
192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.
231. *General Biochemistry*. I. 7 hr. PR: General chemistry, organic chemistry. (For medical students; others by consent.) Consists of seven main lectures, one clinical correlation lecture and one problem session per week.
239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)
305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry, and consent. For dental and graduate students.) Lecture, conference, and demonstration.
399. *Special Topics*. (General Biochemistry). I.(4 hr), II. (3 hr) PR: General chemistry, organic chemistry. (For graduate students in basic sciences programs.)
399. *Special Topics*. I, II. 1-2 hr. PR: Consent. Journal Club, Teaching, and Laboratory Rotations.

490. *Teaching Practicum I and II*. 1-3 hrs. Consent of chairperson. Supervised practice in college teaching of biochemistry. Graded as S or U.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Cell biology; nucleic acids; enzymology, protein chemistry and physical biochemistry (each topic—one semester; offered alternate years). Designed primarily to provide a background for students who will do research in biochemistry and molecular biology.
496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr. PR: Consent.

### **Conjoined Basic Sciences Courses (CC MD)**

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designated as Conjoined Courses.

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. (For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
350. *Radiation Safety and Radionuclide Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; NRC and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. II. 2-4 hr. PR: Second-year medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as Gen. 370, Med. 370, Pedia. 370.)
375. *Neurobiology*. (For medical and a limited number of regular, full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (Graded as S or U.) The fourth year is selective and offers a wide range of opportunities. The student works with the adviser to select the individual program. This program must also be approved by the fourth-year curriculum coordinator in the Office of Student Affairs. The year is composed of eleven 4-week blocks, sixteen of which must be spent in intramural programs on the Morgantown campus or at the Charleston Division—WVU Medical Center. A Catalog is available that lists the specific guidelines for the fourth-year curriculum as well as approved intramural and in-state extramural selectives.

# Biomedical Sciences-Marshall University

Gary O. Rankin, Coordinator of the Program  
Carl A. Gruetter, Graduate Coordinator  
Marshall University Medical Education Building,  
1542 Spring Valley Dr., Huntington, WV 25755  
Degree Offered: Ph.D.

Graduate Faculty: Members Aulick, Berk, Brown, Chertow, DeMesquita, Fenger, Fish, Gruetter, Johnson, Larsen, Lotspeich, Madan, McCumbee, Moore, Mufson, Rankin, Reichenbecher, Simmons, Szarek, Valentovic, Waldron, Wang, Wright and Zill. Associate Members, Baltaro, Fix, Jackman, Moat and Primerano.

The Basic Sciences Departments of Marshall University School of Medicine offer a program of study conjointly with West Virginia University which leads to the degree of doctor of philosophy in the biomedical sciences. The work for this degree is done on the Marshall University campus in Huntington, West Virginia, with the degree awarded by West Virginia University.

The primary aim of the program is to graduate doctoral students who are broadly based in the biomedical sciences, but who have definite interests and special training in anatomy, biochemistry, microbiology, pharmacology, or physiology. The program is designed to be flexible and research oriented in order to prepare a student for a career in one of the areas of academic or industrial biomedical science.

## Admission

Students who wish to enroll in the doctor of philosophy program must apply for admission through the Marshall University Graduate School. They must meet the admission requirements of West Virginia University, the Marshall University Graduate School, and the Graduate Studies Committee of the Marshall University School of Medicine. Interested persons should contact the Biomedical Program Coordinator, Department of Pharmacology, Marshall University School of Medicine, Huntington, WV 25755-9310.

Applicants to the doctor of philosophy in biomedical sciences program must possess a baccalaureate degree with undergraduate-level course work including one year of general biology, one year of general physics, one year of introductory chemistry, and one year of organic chemistry, all with associated laboratories. Although not required for admission, undergraduate course work in calculus and physical chemistry is desirable as it may be prerequisite for advanced course work in certain areas of specialization.

Applicants should submit three letters of recommendation and Graduate Record Examination scores (aptitude and advanced) to the Biomedical Program Coordinator. In addition, transcripts and an admission application must be sent to the Marshall University Office of Admissions, Huntington, WV 25755.

Applicants who already possess a master of science in biomedical sciences, or equivalent experience, are eligible to apply for full admission directly into the doctor of philosophy program in biomedical sciences. The requirements for full admission into the program are essentially the same as those required for award of the master of science in biomedical sciences with the exception that a requirement for a master's thesis may be waived.

Applicants who do not possess a master of science in biomedical science, or equivalent experience, but who do meet all of the other requirements listed above can be provisionally accepted into the doctoral program. Provisional acceptance requires the student to successfully complete the masters course work prior to full acceptance.

## **Program Requirements**

Every student must take courses in cellular and molecular biology, statistics, and seminar. In addition, each student, with approval of his/her advisory committee, must successfully complete at least one basic course (minimum four credit hours) in a minimum of three basic biomedical science departments. Elective courses, chosen with concurrence of the students's advisory committee, will provide the remainder of the required credit hours (a minimum of 18).

Upon admission to the doctoral program, the student's doctoral advisory committee will be formed. The doctoral advisory committee consisting of six members will periodically review the student's progress as well as act as the examination committee. One member, the student's research adviser, will serve as the committee chairperson. One other member from the student's major department and two from other departments (one each from the student's two minor departments) will be recommended to the Marshall Graduate School dean for appointment to the committee by the student's research adviser. The two remaining members of the advisory committee will be appointed from faculty in appropriate departments at West Virginia University.

The doctoral student's plan of study and research will be guided by the student's advisory committee. Course work will consist of a seminar each semester and electives as directed by the student's advisory committee. After satisfactory completion of all general and specialty course work requirements, the student must successfully complete a preliminary qualifying examination to be admitted to candidacy for the doctor of philosophy degree.

The preliminary qualifying examination, the most rigorous and comprehensive examination that the student must take, will be given at the direction of the student's advisory committee and must be completed by the end of the second year or 48 credit hours after full admission into the doctoral degree program. This examination will consist of both written and oral portions.

After admission to candidacy and completion of course work and research, the student must prepare and successfully defend in a final examination a dissertation of his/her research. Satisfactory performance on the examination requires approval by five members of the student's advisory committee, which then recommends award of the doctor of philosophy degree.

To receive a degree, all students in the biomedical sciences graduate program must have a scholastic grade-point average of not less than 3.0 (B) in all graduate work completed in the program. All grades of C or less are counted in computing averages, but no more than six credit hours of C, and no credit hours below C, may be applied toward degree requirements. Credit/No Credit hours may be included toward degree requirements. They will not affect the quality grade-point computation.

## **Residence**

The doctoral program will normally require two and a half to three years of full-time graduate work beyond the M.S. degree. This must include a minimum of two semesters of residence in full-time graduate study at Marshall University. In addition, all doctoral students in this program, regardless of receipt of financial assistance, must participate in the teaching and research programs as an integral part of their advanced training.

## **Research**

Experimental neurobiology, neuroanatomy and neurophysiology of sensory/motor pathways, cellular neurophysiology, molecular biology, lipid metabolism, cancer

biochemistry, estrogen receptors in human breast cancer, diabetes, molecular virology, molecular genetics, pathogenic microbiology, microbial physiology, immunoregulation, toxicology, biochemical pharmacology, cardiovascular and pulmonary physiology and pharmacology, sleep physiology, endocrinology, temperature regulation and postburn metabolism, sensory transduction and ion channel regulation.

For courses of instruction, see the Marshall University Graduate School Catalog; contact the Office of Admissions, Marshall University, Huntington, WV 25701.

## Microbiology and Immunology

Irvin S. Snyder, Chairperson

James Sheil, Graduate Coordinator

Degrees Offered: M.S., Ph.D.

Graduate Faculty: Members Aronoff, Burrell, Charon, Gerencser, Humphries, Landreth, Lewis, Olenchock, Pore, Sheil, Snyder, Sorenson, Thompson, Yelton and Young. Associate Members: Hall and Mengoli

The Department of Microbiology and Immunology offers programs of study leading to the degree Doctor of Philosophy (Ph.D.) or Master of Science (M.S.) in microbiology and immunology. Students with an undergraduate degree can apply to either the Ph.D. or M.S. program. The major purpose of graduate education in the department is research training. The basic philosophy of the department is that the students have a strong foundation in basic concepts of microbiology and immunology, and flexibility in choosing advanced course work in their specific areas of interest. A major emphasis of the graduate program is extensive laboratory research training in microbiology and immunology. Each student will complete an original, in depth research investigation. The overall aim of the program is to produce students capable of designing and doing independent research and teaching.

### Admission Requirements

Applicants to either the Ph.D. or M.S. graduate programs in microbiology and immunology must have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics (including calculus) in order to be considered for admission. Applicants must submit a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores-both aptitude and advanced to the Chairperson, Admissions and Scholarship Committee, Department of Microbiology and Immunology. In addition, transcripts and an official application for admissions must be sent directly to the WVU Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009. Applicants for admission to a degree program should have a grade-point average of 3.0 or better, and a score of 600 or above on each of the GRE examinations. International students must have a TOEFL score of 550. Early application is encouraged. Applicants desiring financial aid should complete their application before January 1. All applications must be completed by June for fall admission. Applications for admission in the spring semester must be completed by November 1.

### Program Requirements Master of Science (M.S.)

Every student must take the following courses or demonstrate proficiency by examination in each of the following areas: Microbiology (M. Bio.) 301 *Medical Microbiology and Immunology*, M. Bio. 310 *Structure and Activities of*

*Microorganisms*, and M. Bio. 391 *Advanced Topics [Laboratory Rotation]*. Two semesters of biochemistry are required. The remainder of the course work is selected by the student and the advisory committee from the following courses: M. Bio. 327, 399, or any of the microbiology and immunology advanced study courses (M. Bio. 491). Enrollment in M. Bio. 496 *Seminar* is required each semester that the student is in residence. All full-time students in the Department of Microbiology Immunology are required to participate in teaching at least one semester a year.

The Master of Science program requires 30 hours course work of which at least 20 hours must be in microbiology and immunology. Six hours must be in research (M. Bio. 397). A grade point average of at least 3.0 must be maintained. A thesis representing original research and a final oral examination are required. In general, two years are needed to complete the M.S. program.

### **Doctor of Philosophy (Ph.D.)**

Students with either a bachelor's or master's degree can apply to the Ph.D. program. The doctoral candidate with a bachelor's degree will complete the basic course requirements expected of an M.S. candidate. The doctoral candidate with an M.S. degree from another department must have had course work or demonstrate knowledge in microbiology and immunology and biochemistry equivalent to that of an M.S. student in the department. In addition, the doctoral student will take additional appropriate course work as determined by the student's graduate research advisory committee. A minimum of nine hours in Microbiology 491 courses or selected advanced courses from other departments is required. Where appropriate, course work in related subjects such as computer science, cell biology, biochemistry, physical chemistry, and statistics will be required. M. Bio. 496 *Seminar* is a required course each semester that the student is in residence. The student will maintain a grade point average of 3.0. The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation and the passing of a written qualifying and final oral examination. The qualifying examination is given at the end of the first year of study. The final oral examination is given after completion of research and an acceptable dissertation. All full-time students are required to participate in teaching at least one semester a year. Three years are usually needed to complete the Ph.D. program.

### **Additional Information**

The Department of Microbiology and Immunology has informal journal clubs in immunology and in microbiology. These are designed to help the students develop skills in reading, interpreting and discussing current research articles. All students are expected to participate in one or more.

For application materials, a description of faculty research interests, guidelines for graduate study in the Department of Microbiology and Immunology, or additional information, write to the Chairperson, Admissions and Scholarship Committee, Department of Microbiology and Immunology, Health Sciences Center, West Virginia University, Morgantown, WV 26506.

### **Research**

**Pathogenic Bacteriology:** mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of clinical microbiology.

**Mycology:** pathobiology of medical the oral cavity; antibiotic resistance;

immunomodulation of cystic fibrosis; mycoses; environmental health implications of fungal and algal toxicoses.

*Physiology*: nutrition and metabolism of a variety of pathogenic microorganisms; growth and protein synthesis in obligate intracellular bacteria.

*Genetics*: basic studies on the mechanisms of genetics including transfer of genetic information; recombinant DNA studies.

*Virology*: molecular and cellular oncology; bacteriophage host interactions.

*Parasitology*: host parasite relationships between helminth parasites and insects and vertebrate hosts; endosymbionts in protozoa.

*Immunology*: immunopathology of pulmonary disease; inflammatory response to inhaled organisms; developmental aspects of immunity; mechanisms of T cell function.

*Other programs*: detection of environmental pollutants; effect of environmental agents on host resistance.

### **Microbiology (M. Bio.)**

26. *Microbiology*. (For students in nursing dental hygiene programs; other students with consent of instructor) I.4. PR: Chem. 11, 12 or equiv.
220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
223. *Microbiology*. (For medical technology students; other students with consent.) II. 5 hr. PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
224. *Parasitology*. (For medical technology students. Other students with consent.) II. 4hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
301. *Microbiology*. (For medical students and a limited number of graduate students in health sciences, basic science departments.) I. 5-7 hr. PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms and immunology. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. (For dental students only.) I. 5 hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
310. *Structure and Activities of Microorganisms*. II. 3 hr. PR or Conc: Biochemistry, consent. Molecular biology of *E. coli* and other selected organisms.
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem.  
A. *Special Problems in Basic Immunology*. I. 2 hr. PR: Consent M. Bio. 310; biochemistry.  
B. *Special Problems in Microbiology*. I, II, S. VR. PR: Consent.  
C. *Special Problems in Post Graduate Dental Microbiology*. II. 4 hr. PR: Consent.
327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
391. *Advanced Topics*.  
A. *Laboratory Rotation*. I. 3 hr. PR: Consent; For graduate students in Microbiology and Immunology. Assigned study to develop research laboratory techniques. (Graded S / U.)  
B. *Immunology*. I, II, S, VR. PR: Consent. Independent study in immunology.

397. *Master's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Graduate students in Microbiology and Immunology. Students may enroll more than once. (Graded as S or U.)
399. *Special Topics in Microbiology, Cell Biology*. II. 3 hr. PR: Biochemistry; 1 yr. undergraduate biology; consent. Lectures in selected areas of cell biology.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*.
- Pathogenic Bacteriology*. I. 2 hr. PR: M. Bio. 301, 310 or equiv., consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease.
- Clinical Laboratory Bacteriology*. I, II. VR. PR: M. Bio. 301, 310, or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)
- Microbial Genetics*. I. 3 hr. PR: M. Bio. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.
- Microbial Metabolism*. II. 2 hr. PR: M. Bio. 310 or equiv., biochemistry, consent. Physiology, metabolism, and regulation of representative microbial groups.
- Microbial Metabolism Laboratory*. II. 1 hr. PR: Open to departmental graduate students only. Research techniques in metabolic regulation.
- Medical Mycology*. I. 3 hr. PR: Consent. Advanced study of fungi of medical importance, including the pathobiology of mycoses and toxicoses.
- Molecular Virology*. I. 3 hr. PR: M. Bio. 301, 310, or equiv.; consent. Molecular biology of viruses that are important both biologically and medically. Includes a basic introduction to replication and genetics as well as current topics in molecular virology.
- Developmental Immunology*. I. 3 hr. PR: Consent. Examines the development of the lymphoid components of the immune system (B and T lymphocytes) and interactions leading to effective immune responses.
- Cellular and Genetic Basis of the Immune Response*. II. 3 hr. PR: Consent. Emphasis is on contemporary issues in understanding the genetic and cellular elements that impact immune responses.
- Contemporary Topics in Immunology*. II. 3 hr. PR: Consent. Detailed coverage of
- Systems Immunology*. II. 3 hr. PR: Consent. An integrative, systems approach to immunology stressing how immunologic recognition is translated into biologic consequences. Advanced treatment of different aspects of the efferent arm of immune responses.
496. *Seminar*. I, II. 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)
497. *Ph.D. Research or Dissertation*. I, II, S. 1-15 hr. Students may enroll more than once. (Graded as S or U.)

# Pathology

Nathaniel F. Rodman, M.D., Chairperson

*Research Areas* -- Atherosclerosis; thrombosis; platelet aggregation and functions with correlative ultrastructural study, lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electron microscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; histogenesis of neoplasia; biomedical application of laboratory medicine; and applied laboratory studies in microbiology.

## Pathology (Path.)

128. *Introduction to Basic Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy, or consent. A study of the basic pathologic processes in man.
129. *Introduction to Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.
328. *Basic Pathology*. (For dental students and graduate students, with consent.) II. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.
338. *Oral Pathology 1*. II, S. 3 hr. PR: Path. 328, or consent. Clinical, radiographic, and microscopic discussion of local and systemic diseases affecting oral and paraoral structures.
350. *Hematology*. 3 hr. (For certain graduate students, with consent of the chairperson.) Includes morphologic description of formed elements of blood including classification of red blood cell, white blood cell, and platelet disorders. Case material and slide reviews are integral parts of the course work.
351. *Pathology and Laboratory Medicine 1*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I. 8 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.
352. *Pathology and Laboratory Medicine 2*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) II. 7 hr. PR: Path. 351. Continuation of Path. 351.
353. *Oral Pathology 2*. I. 2 hr. PR: Path. 338; consent. Continuation of Path. 338.
355. *Oral Disease Diagnosis and Management*. (For dental students, third year.) II. 1 hr. PR: Path. 338, 353, consent. Oral and systemic diseases are presented clinically, radiographically, and histologically. Diagnosis is established and treatment arrived at through group discussion.
356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 or 351; consent. Microscopic and gross specimens from selected autopsies.
382. *Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353, consent. Microscopic study of head and neck lesions.

401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.
491. *Advanced Study*. 1-3 hr. PR: Consent. Specialized study in subspecialty, such as blood banking, clinical chemistry, immunopathology. (*Special lectures and/or seminar.*)
497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology and Toxicology

William W. Fleming, Ph.D., Chairperson

Charles R. Craig, Director of Graduate Studies

Degrees Offered: M.S., Ph.D.

Graduate Faculty: Members Azzaro, Birkle, Colasanti, Craig, Davis, Fedan, Fleming, Houser, Mawhinney, Reasor, Smith, Stitzel, Strobl, Taylor, Van Dyke and Weber.

Pharmacology and toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of Master of Science and Doctor of Philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, immunotoxicology, and renal, hepatic, and pulmonary toxicology.

### Admission Requirements

Regular applicants for the graduate program in pharmacology and toxicology should present, as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; four semesters of chemistry including two semesters of organic chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Health Sciences Center, Morgantown, WV 26506.

### Master of Science

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is available as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project (thesis). The course work requirements for the M.S. in pharmacology and toxicology usually consist of *Physiology* 344 and 345, *Biochemistry* 310 and 312, *Statistics* 11, *Pharmacology and Toxicology* 361, 363, 364, 367, 461, 462, and 497. Most students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research in lieu of a thesis.

The department is now offering a special, non-thesis master's program in pharmacology and toxicology. This is a limited program and is only available to residents in the occupational medicine program. Course requirements are minimal since students will have already completed the M.D. degree.

Requirements include the following:

1. Completion of a laboratory research project in toxicology, the results of which will be presented to the department both as a written report and a formal oral presentation.
2. Demonstrated proficiency in the field of toxicology as evidenced by passing a comprehensive oral examination in the area of occupational toxicology given by a committee of three faculty members.
3. A minimum of 36 credit hours approved by the department.
4. Successful completion of the course in occupational toxicology (Pcol.362) with a grade of B or better.
5. Participation in a toxicology journal club where the current research literature is reviewed.
6. Attendance at departmental seminars relating to toxicology.

Master's committees will consist of no fewer than three members with no more than one from outside the department, the majority of which will be regular members of the graduate faculty including the chairperson. No more than one person may be a non-member.

### **Doctor of Philosophy**

Before official admission to candidacy for the doctorate, the student must satisfactorily complete a grant writing exercise, an acceptable progress report, and an oral comprehensive qualifying examination. When a student has submitted a grant proposal, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral qualifying examination is administered in January of the student's third year in the program.

### **Dissertation**

Upon admission to candidacy for the degree of Doctor of Philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation that makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

### **Research Areas**

**Autonomic pharmacology:** Autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release, and metabolism of transmitters and adrenal medullary hormones. **Chemotherapy:** Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms.

**Biochemical pharmacology:** Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. **Endocrine pharmacology:** Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. **Neuropharmacology:** Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system.

Toxicology: Metabolism of toxic agents, pulmonary toxicology, renal toxicology, immunotoxicology, and environmental toxicology, perinatal pharmacology and toxicology.

### **Pharmacology and Toxicology (Pcol.)**

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
243. *Pharmacology for Pharmacy Students*. I. 4 hr. PR: Completion of first year in Pharmacy; approval of course director. Principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
360. *Pharmacology and Therapeutics*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacological actions and therapeutic uses of drugs.
361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
362. *Occupational Toxicology*. II. 3 hr. PR: Consent. General principles of toxicology with special emphasis on occupational health. Classes of chemicals which pose problems in the work place will be emphasized.
363. *Toxicology*. I. 3-4 hr. (Variable credit, majors enroll for 4 hr.; non-majors for 3 hr.) PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on molecular mechanisms of toxicity. (3-4 hr. lec.)
364. *Advanced Pharmacology*. I. (Alternate Years.) 1-6 hr. PR: Pcol. 361 or consent Advanced lectures and discussion in three parts: 1. Advanced Basic Principles of Pharmacology, 2. Advanced Cellular Pharmacology, and 3. Advanced Toxicology. Offered every second year.
367. *Advanced Neuropharmacology*. I. 1-6 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion in three parts: 1. Receptors and signal transduction. 2. Neurochemistry-neurotransmitters and 3. Advanced neurosystems. Offered every second year.
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology, including journals of allied biological sciences.
490. *Teaching Practicum*. I, II. 1-3 hr. per sem. PR: Pcol. 361 and consent. (For advanced graduate students.) Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. per sem.

# Physiology

Ping Lee, Acting Chairperson

Christine Baylis, Chairperson of Graduate Studies Committee

Degrees Offered: M.S., Ph.D.

Graduate Faculty: Members Baylis, Brown, Castranova, Connors, Franz, Frazer, Gladfelter, Goodman, Hedge, Johnson, Kotchen, Lee, Miles, Millecchia, Overbeck, Strauber and Yokota. Associate members Boegehold, Huffman, Morgan, and Michalkiewicz.

The Ph.D. program is designed to produce physiologists of high quality, capable of conducting independent research and being effective teachers. Students in our department are exposed to all aspects of physiology and a variety of related sciences. The master's program is designed as an introduction to research in physiology for students interested in, but not yet committed to, a research career. Students in this program receive training in the fundamentals of physiology and experience in a research laboratory.

## Admission Requirements

Applicants should have a strong background in biology and/or chemistry. In addition to a basic biology course, it is strongly recommended that applicants have taken cellular or molecular biology and an introductory physiology course; a course on comparative anatomy also provides particularly useful background information. Inorganic and organic chemistry are basic requirements, while physical chemistry is recommended but not required. Finally, as several areas of physiology require an understanding of the fundamentals of calculus and physics, introductory courses in these subjects are also essential.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application form, and Graduate Record Examination scores (aptitude and one advanced test). Applicants from non-English speaking countries also need a Test of English as a Foreign Language (TOEFL) score in excess of 550. A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as May of the year of matriculation applications must be received before February 1 to be considered for financial aid.

## Master of Science

Prerequisites for admission to the master's program are the same as for the doctoral program. The first two semesters are devoted largely to course work in physiology: ten hours of physiology, four hours of neurophysiology, and four hours of physiological methods. Students are also introduced to the research interests of the faculty through the graduate colloquium and rotations in some faculty members' laboratories. By the end of the second semester, students will have picked a thesis adviser and will begin work in that laboratory during the summer. The second year is spent primarily on research for and writing of the master's thesis. Students are required to take four hours of advanced physiology and present a research seminar during the second year.

## Doctor of Philosophy

The first year curriculum familiarizes the student with the basic information and principles that form a background for advanced work in physiology. Much of this overlaps with the basic science material presented to medical students so that all students attend several medical school courses, including physiology, neurophysiology, and a two semester biochemistry course. Finally, students lacking a statistical background are expected to take a basic statistics course.

In addition to this course work, students are introduced to the research interests of the physiology faculty through the graduate colloquium and rotations in some faculty members' laboratories. The latter are designed to help students choose a thesis adviser by exposing them to the experimental approaches and techniques used in different laboratories within the department.

During the first summer, students are expected to begin research projects in a departmental research laboratory of their choice. This allows a student to explore an area of research interest, and to develop a working relationship with a faculty member, without a firm commitment to pursue a thesis project in that laboratory.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses include advanced physiology (12 hours), graduate colloquium (two hours), graduate seminar (one hour), teaching practicum (two hours), cell biology (three hours) and research (nine hours).

The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. In addition, the student begins to develop his/her teaching skills. The purposes of the graduate colloquium and seminar are twofold. First, they give students an opportunity to become informed of the latest scientific advances. Secondly, students have an opportunity to develop and practice presentation of research seminars. In addition to presentations by faculty and students from the Department of Physiology, faculty members from other departments at WVU and from other institutions are invited to present seminars in the program.

After successful completion of the second academic year, the student takes a two-part qualifying examination. The qualifying examination consists of a comprehensive written examination covering all of the major areas of physiology, followed by a written and oral research design examination. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy.

During the third and fourth years the student may enroll in elective courses. Yearly participation in the teaching practicum provides additional experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research. Results of this effort are presented annually in the graduate colloquium. During these years, the student will attend and present papers at national meetings of scientific societies (e.g., American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences). The Ph.D. degree generally can be completed in four years.

## Research and Instruction

*Research Areas*—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, muscle, neural, renal, and respiratory physiology.

## Physiology (Physi.)

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lec., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physico-chemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology.
248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lec., 2 lab.
341. *Physiological Methods 1*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology.
342. *Physiological Methods 2*. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology.
343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lec., 1 conf., 1 lab.
344. *Medical Physiology 1*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 5 lec., 1 conf.-lab.
345. *Medical Physiology 2*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 5 hr. PR: Physi. 344 and consent of department chairperson. Continuation of Physi. 344. 5 lec., 1 conf.-lab.
346. *Neurophysiology*. (For graduate students in medical center basic sciences departments and a limited number of regular full-time graduate students.) II. 1-4 hr. PR: Math. 3 or 141, Phys. 1 and 2 or consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 1-3 lec., 1 conf.
350. *Graduate Physiology 1*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) I. 6 hr. PR: Calculus, college physics, organic chemistry, biology, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control.
351. *Graduate Physiology 2*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) II. 6 hr. PR: Physi. 344 or 350 and consent of department chairperson. Continuation of Physi. 350.
399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.

444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate standing and consent.(Graded as S or U.)
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent.(Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1 hr. PR: Consent.(Graded as S or U.)

# School of Dentistry

W. Robert Biddington, Dean  
Henry J. Bianco, Associate Dean  
William L. Graham, Associate Dean  
William R. McCutcheon, Associate Dean  
James Overberger, Associate Dean  
Frank H. Stevens, Assistant Dean

## Degrees Offered

D.D.S. in Dentistry  
M.S. in Endodontics  
M.S. in Orthodontics  
B.S. in Dental Hygiene  
M.S. in Dental Hygiene

## Historical Background

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

## Mission

- To provide the people of West Virginia with an oral health center for education, research and service activities;
- To contribute to and improve the dental health of all people, especially the citizens of West Virginia.

The School of Dentistry of West Virginia University offers degrees of Doctor of Dental Surgery, Masters of Science in Endodontics, Orthodontics, and Dental Hygiene, and Bachelor of Science in Dental Hygiene. The Department of Oral and Maxillofacial Surgery offers one four year residency. Seven general practice residencies are offered by the Department of Hospital Dentistry. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

## Accreditation

All programs are accredited by the Commission on Dental Accreditation of the American Dental Association.

## Administration

Administration of the School of Dentistry is the responsibility of the dean. He is aided in this function by four associate deans, one assistant dean, and the clinical and Health Sciences Center chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the dean in carrying out the established policies of the School of Dentistry and of the University.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene

444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate standing and consent.(Graded as S or U.)
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent.(Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1 hr. PR: Consent.(Graded as S or U.)

# School of Dentistry

W. Robert Biddington, Dean

Henry J. Bianco, Associate Dean

William L. Graham, Associate Dean

William R. McCutcheon, Associate Dean

James Overberger, Associate Dean

Frank H. Stevens, Assistant Dean

## Degrees Offered

D.D.S. in Dentistry

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## Historical Background

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

## Mission

- To provide the people of West Virginia with an oral health center for education, research and service activities;
- To contribute to and improve the dental health of all people, especially the citizens of West Virginia.

The School of Dentistry of West Virginia University offers degrees of Doctor of Dental Surgery, Masters of Science in Endodontics, Orthodontics, and Dental Hygiene, and Bachelor of Science in Dental Hygiene. The Department of Oral and Maxillofacial Surgery offers one four year residency. Seven general practice residencies are offered by the Department of Hospital Dentistry. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

## Accreditation

All programs are accredited by the Commission on Dental Accreditation of the American Dental Association.

## Administration

Administration of the School of Dentistry is the responsibility of the dean. He is aided in this function by four associate deans, one assistant dean, and the clinical and Health Sciences Center chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the dean in carrying out the established policies of the School of Dentistry and of the University.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene

students include 160 treatment cubicles and all necessary related laboratories. The student s treat their assigned patients under close supervision of faculty and receive practical experience while rendering service to thousands of patients annually.

## **Books and Instruments**

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses. All dental students must maintain a library of required textbooks through graduation. Used books, instruments, and equipment are not acceptable.

## **Organizations**

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Research.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Research during the period of enrollment in the School of Dentistry.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*American Association of Women Dentists.* The objectives and purposes of the West Virginia University School of Dentistry Chapter of the American Association of Women Dentists are to offer opportunities for personal growth through association with women in our profession, to support the goals of the American Association of Women Dentists, to aid in the advancement of women in dentistry, to promote professional support and cooperation among its members, and to promote the fundamentals of good oral health.

*Academy of Dentistry for the Handicapped.* The Academy of Dentistry for the Handicapped is an international organization for dental students and hygiene students interested in management and treatment of special care patients. Community services are provided by assisting with Special Olympics and presenting disability awareness programs to area grade schools. Guest speakers are sponsored on topics such as "Managing the Hearing Impaired Patient in the Dental Office," "Use of Restraint in Treating Handicapped Patients," and "Child Abuse and Neglect in Special Needs Children."

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of Dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

**Dental Fraternities.** Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

**The American Dental Hygienists' Association** is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

**Sigma Phi Alpha** is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

### **Doctor of Dental Surgery Program (D.D.S.)**

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants are considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

### **Admission Requirements**

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements, appropriate completion of all application instructions, submission of all transcripts from each college attended, personal interview, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding initial enrollment).

Application for admission in a fall term should be made one year in advance (for example, for admission for fall 1992, application should be made promptly upon completion of the 1990-91 school year; for fall 1993, upon completion of the 1991-92 school year) even if the applicant has not completed all the requirements as listed.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisites for admission include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric, or equivalent.....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	6

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Health Sciences North, WVU Health Sciences Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the fall of 1992, is November 1, 1991. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet; applicants should review them carefully. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.

Each applicant is required to complete the Dental Admission Test satisfactorily. The test should be taken in April (before making application in June) for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Final acceptance of a student is contingent upon satisfactory completion of all requirements.

### **Requirements for the Degree (D.D.S.)**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Trustees for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
2. Shall have completed the prescribed curriculum for each of the academic sessions.
3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

### **Curriculum**

The basic required courses in the curriculum are presented throughout the first seven semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program, overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general

practice track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. In addition to the required courses, fourth-year students are required to register for at least three hours of electives during each semester enrolled.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and, at the same time, they serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairperson and the Associate Dean for Academic Affairs. The student will pursue the approved curriculum through completion of the D.D.S. program.

Additional requirements include participation in mock board examinations by fourth-year students and three weeks of remote-site training by all students. Furthermore, students must satisfactorily complete all courses that are attempted.

Students, having developed competency in all clinical disciplines, and having met all other requirements, are eligible for consideration for graduation at the end of term I of the fourth year.

## **Promotion**

At the end of each grading period (i.e., each academic semester or session) all students will have their individual progress reviewed by the academic standards committee convened for their class. The progress of each student in the curriculum is governed by a set of minimum acceptable performance standards upon which the academic standards committee bases its decisions.

The standards consist of three categories: scholastic performance; clinic utilization; and professional development. Scholastic performance requires that each student must earn a specified grade-point average to be promoted to the succeeding year. Clinic utilization requires that each student must utilize a specified percentage of available clinic time to demonstrate steady progress toward attainment of clinical competency. Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the student's personal behavior and patient management.

These performance standards are explained in detail in the "Curriculum and Academic Standards Statement for the WVU School of Dentistry." All first-year students are presented this statement prior to entering school and are required to acknowledge by their signature that they have read and accepted the conditions set by the material contained therein.

At the completion of each academic term, following the Committee on Academic Standards meetings, the status of each student is reported to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, or be suspended or dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the appropriate Committee on Academic Standards and the Dean of the School of Dentistry.

# School of Dentistry Course Schedule

First Year—Didactic Courses	Hrs	Sem.1	Sem.2	S.
300—Anesthesiology	1			X
303—Oral Diagnostic Techniques	2			X
304—Operative Dentistry	4		X	
305—General Biochemistry	4		X	
324—Gross Anatomy	7		X	
309—Microanatomy and Organology	5	X		
310—Dental Anatomy and Occlusion	6	X	X	
311—Periodontics	1			X
312—Dental Materials	3	X		
313—Removable Prosthodontics	3	X		
314—Fixed Prosthodontics	1			X
315—Periodontics	2	X	X	
316—Removable Prosthodontics	1			X
317—Removable Prosthodontics	1		X	
318—Oral Histology and Embryology	2	X		
319—Pediatric Dentistry	1		X	
320—Community Dentistry	1	X		
321—Endodontics	2			X
322—Operative Dentistry	2			X
<b>Second Year—Didactic Courses</b>				
302—Microbiology	5	X		
323—Clinic Orientation	0	X		
325—Practice Management	1		X	
327—Oral Radiology	1	X		
328—General Pathology	5		X	
329—Operative Dentistry	2	X		
330—Community Dentistry	1		X	
331—Dental Anatomy and Occlusion	2			X
332—Periodontics	1		X	
333—Physical Diagnosis	1		X	
334—Removable Prosthodontics	3	X	X	
335—Pediatric Dentistry	2	X	X	
336—Fixed Prosthodontics	6	X	X	
337—Oral Diagnosis	1		X	
338—Oral Pathology	3		X	X
339—Oral Surgery	1			
340—Periodontics	1	X		
341—Removable Prosthodontics	2			X
342—Periodontics	1	X		
343—Fundamentals of Physiology	5	X		
345—Principles of Orthodontics	1		X	
346—Orthodontic Technics	1			X
348—Operative Dentistry	1			X
349—Hospital Dentistry	1			X
<b>Second Year—Clinical Courses</b>				
375—Dental Practice Management	1-3		X	X
376—Removable Prosthodontics	1-6		X	X
377—Periodontics	1-4		X	X
380—Endodontics	1-4		X	X
383—Operative Dentistry	1-8		X	X
384—Oral Surgery	1-3		X	X
386—Pediatric Dentistry	1-5		X	X
387—Clinical Oral Diagnosis	1-3		X	X
389—Fixed Prosthodontics	1-6		X	X
396—Clinical Oral Radiology	1-3		X	X

<b>Third Year—Didactic Courses</b>	<b>Hrs.</b>	<b>Sem.1</b>	<b>Sem. 2</b>	<b>S</b>
347—Management of Medical/Dental Emergencies	1		x	
350—Removable Prosthodontics	1	x		
351—Dental Anatomy & Occlusion	1		x	
352—Community Dentistry	2	x	x	
353—Oral Pathology	2	x		
355—Clinic-Pathologic Correlation Conference	1		x	
356—Removable Prosthodontics	1		x	
357—Fixed Prosthodontics	2	x	x	
358—Operative Dentistry	2			x
359—Oral Surgery	2	x	x	
360—Pharmacology	4	x		
361—Pediatric Dentistry	1	x		
362—Endodontics	1	x		
363—Periodontics	2	x	x	
364—Pain and Anxiety Control	1	x		
365—Orthodontics	1		x	
366—Pediatric Dentistry	1		x	
370—Community Dentistry	1			x
371—Practice Management	2	x		
372—Practice Management	1		x	
373—Practice Management	1			x
374—Principles of Medicine	2	x		
<b>Third Year—Clinical Courses</b>				
375—Practice Management	1-3	x	x	x
376—Removable Prosthodontics	1-6	x	x	x
377—Periodontics	1-4	x	x	x
380—Endodontics	1-4	x	x	x
383—Operative Dentistry	1-8	x	x	x
384—Oral Surgery	1-3	x	x	x
385—Orthodontics	1-3	x	x	x
386—Pediatric Dentistry	1-5	x	x	x
387—Clinical Oral Diagnosis	1-3	x	x	x
388—Pediatric Dentistry	1	x	x	x
389—Fixed Prosthodontics	1-6	x	x	x
396—Clinical Oral Radiology	1-3	x	x	x
<b>Fourth Year—Clinical Courses</b>				
375—Practice Management	1-3	x	x	
376—Removable Prosthodontics	1-6	x	x	
377—Periodontics	1-4	x	x	
380—Endodontics	1-4	x	x	
383—Operative Dentistry	1-8	x	x	
384—Oral Surgery	1-3	x	x	
385—Orthodontics	1-3	x	x	
386—Pediatric Dentistry	1-5	x	x	
387—Clinical Oral Diagnosis	1-3	x	x	
388—Pediatric Dentistry	1	x	x	
389—Fixed Prosthodontics	1-6	x	x	
394—Community Dentistry	1	x	x	
395—Hospital Dentistry Practicum	2	x	x	
396—Clinical Oral Radiology	1-3	x	x	
397—Special Topics	1-15	x	x	

The relationship of the number of elective and/or required hours during the fourth year may vary with each student depending upon the individual student's progress.

## Courses of Instruction in Dentistry

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Associate Dean for Academic Affairs.

### Community Dentistry (Dent.)

Professors McCutcheon (Chairperson) and Meckstroth; Clinical Professor Thompson; Clinical Associate Professors Ingersoll and Wilson; Clinical Assistant Professors Morgan, and Taylor; Clinical Instructors Goldstein, Krieg, Vance, Weber, and Weese.

320. *Community Dentistry*. I. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
330. *Community Dentistry*. II. 1 hr. Lectures provide the student with a basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
352. *Community Dentistry*. Yr. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
370. *Community Dentistry*. S. 1 hr. PR: Consent. Clinical, social, and community health considerations in the oral health care of geriatric patients.
394. *Community Dentistry*. I, II. 1 hr. Field experience in various aspects of community health.

### Dental Practice Management (Dent.)

Professors Hickman, Puderbaugh (Chairperson) and Walker; Assistant Professor Estep.

325. *Practice Management*. II. 1 hr. A lecture course designed to prepare dental students in the concepts of four-handed dentistry.
371. *Practice Management*. I. 2 hr. PR: Dent. 325. A lecture series on the fundamentals of practice management, including the organization and development of the practice, personnel and financial management, and the introduction to TEAM dentistry.
372. *Practice Management*. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
373. *Practice Management*. S. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management*. Yr. and S. 1-3 hr. PR: Consent. Clinical practice using auxiliaries, including those trained in expanded functions.

## **Endodontics (Dent.)**

Professor Emeritus Alberico; Professors Biddington, and Skidmore (Chairperson); Associate Professors Jackson and Rice; Clinical Assistant Professor Taylor; Clinical Instructor Moreschi.

321. *Endodontics*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
362. *Endodontics*. I. 1 hr. Lectures on rationale, diagnosis, prevention, and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae.
380. *Endodontics*. Yr. and S. 1-4 hr. Clinical endodontic instruction in order to develop the skills and judgment necessary to treat diseases of the dental pulp and their sequelae.
390. *Clinical Endodontics*. I, II, S. 1-5 hr. (May be repeated for credit.) PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Hospital Dentistry (Dent.)**

Professor Welch (Chairperson); Associate Professor Oscanyan; Assistant Professor Marshall; Clinical Professor Cogan; Clinical Associate Professors Black, Christian, Gilbert, Haddox, Haley, Hancock, Kuyk, Jackfert, McCutcheon, Rosenfeld, Skaff, and Wilkerson; Clinical Assistant Professors Brace, Buch, Capriolo, Coffman, Courtney, Fagan, Kennedy, Lee, Payne, Russell, Sokolosky, Vargo, and Wilbourn.

333. *Physical Diagnosis*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
347. *Management of Medical/Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
374. *Principles of Medicine*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
395. *Hospital Dentistry Practicum*. I, II. 2 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## **Operative Dentistry**

Professors Gladwin Hart and Sausen (Chairperson); Associate Professors Foor, Rodeffer, F. Stevens (Assistant Dean), and J. Stevens; Assistant Professor Dickinson; Clinical Associate Professors Chapman, Frye, and Naylor; Clinical Instructor Getty.

304. *Operative Dentistry*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Characteristics and treatment of caries emphasized.
322. *Operative Dentistry*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Certain fundamentals of pedodontics introduced.
329. *Operative Dentistry*. I. 2 hr. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
348. *Operative Dentistry*. S. 1 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Treatment planning procedure is reviewed and examined.
358. *Operative Dentistry*. S. 2 hr. More complex and advanced techniques for clinical practice with emphasis on new developments throughout the scope of operative dentistry.
383. *Operative Dentistry*. Yr. and S. 2-8 hr. Instruction in the clinic setting includes comprehensive diagnosis and treatment planning, computer assisted records, plaque control, caries control, and single tooth restorations. Sufficient variety and depth of experience occurs to obtain competence for independent practice of operative dentistry.

## **Program in Dental Materials**

Professors M. Gladwin, Hart and Overberger; Assistant Professor Dickinson.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Oral Pathology**

Professors Bouquot and Keyes; Clinical Associate Professor Young; Clinical Assistant Professor Roberts.

328. *General Pathology*. (For dental and graduate students). II. 5 hr. PR: Consent. The broad spectrum of human diseases is studied at the clinical, physiological, and biochemical levels.
338. *Oral Pathology*. (For dental students.) II. and S. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
353. *Oral Pathology*. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.

355. *Clinic-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting oral lesions are demonstrated clinically, radiographically, and histologically. Diagnosis is established and treatment discussed by faculty and students.
382. *Advanced Oral Histopathology*. (For dental and graduate students, residents, and interns.) I and II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents, and interns.) I. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

### **Oral and Maxillofacial Surgery**

Professor Emeritus Campbell; Professor Graves (Chairperson); Associate Professor Bakos; Clinical Professors Davidson and Poindexter; Clinical Associate Professors Fogarty, Lattanzi, Oliverio, Syner, and Wine; Clinical Assistant Professors Carson, Douglas, John, King, Lindsay, and Linkous.

300. *Anesthesiology*. II and S. 1 hr. Lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
339. *Oral Surgery*. II. 1 hr. Didactic instruction in basic surgical principles as applied to the extraction of teeth and dentoalveolar surgery.
359. *Oral Surgery*. I and II. 2 hr. PR: Consent. Didactic instruction in patient evaluation complicated exodontia, preprosthetic surgery, diagnosis, surgical and adjunctive treatment of disease, injuries, and defects of human jaws and associated structures.
364. *Pain and Anxiety Control*. I. 1 hr. PR: Consent. Instruction in the psychology, physiology, and clinical techniques of controlling pain and anxiety in the dental patient.
384. *Oral Surgery*. Yr. and S. 1-3 hr. PR: Consent. Clinical instruction in outpatient and inpatient oral surgery necessary to provide comprehensive care for the dental patient.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

## Orthodontics

Professor Legan (Chairperson); Assistant Professors Kitchin and Paonaskar Clinical Associate Professors Martin, Overman, Valentine and Wilfong; Clinical Assistant Professors Gift and Phelps.

- 345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
- 346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
- 365. *Orthodontics*. II. 1 hr. Introduction to clinical orthodontics; lectures on case analysis, treatment planning, and clinical procedures involved in interceptive, preventive, and adjunctive treatment of malocclusions.
- 385. *Orthodontics*. Yr. and S. 1-3 hr. Clinical management of selected malocclusion problems.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Pediatric Dentistry

Professor Fenton (Chairperson); Assistant Professors Holmes and Steelman; Clinical Assistant Professors Dey and Ruby; Clinical Instructor Koster.

- 319. *Pediatric Dentistry*. II. 1 hr. PR: Consent. Normal growth and development presented from physical, intellectual, psychological, and oral perspectives. Behavior of children in dental environment reviewed and strategies for management examined.
- 335. *Pediatric Dentistry*. I and II. 2 hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: oral diagnosis/ treatment planning/case presentation, prevention, restorative dentistry pulpal therapy, management of the developing occlusion and trauma to the dentition and oral structures.
- 361. *Pediatric Dentistry*. I. 1 hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: abnormal dental development, oral habits, and adolescent dentistry.
- 366. *Developmentally/Medically Compromised Child*. I, II. 2 hr. PR: Consent. Didactic instruction in dentistry for the developmentally disabled and/or medically compromised child.
- 386. *Pediatric Dentistry*. I, II, S. 1-5 hr. PR: Consent. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.
- 388. *Pediatric Dentistry*. I, II, S. 1 hr. PR: Consent. Clinic experience in providing comprehensive dental care for the developmentally disabled and medically compromised child.
- 397. *Special Topics* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic and clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Periodontics**

Professors Crout and Morrison (Chairperson); Associate Professors Hornbrook, Jagannathan, and Stuchell; Clinical Associate Professor Wanker; Clinical Assistant Professor Milem; Adjunct Associate Professor Murphy.

- 311. *Periodontics*. S. 1 hr. Introduction to periodontal diseases, their diagnosis and treatment. Laboratory instruction is included.
- 315. *Periodontics*. II. 2 hr. Study of professional communication and introduction to the theory and practice of preventive dentistry.
- 332. *Periodontics*. II. 1 hr. Lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition.
- 340. *Periodontics*. I. 1 hr. Intermediate didactic instruction in periodontal therapy including basic surgery and post-operative care.
- 342. *Periodontics*. I. 1 hr. PR: Consent. Clinical introduction to the practice of preventive dentistry.
- 363. *Periodontics*. Yr. 2 hr. Advanced didactic instruction in periodontal therapy including special surgical procedures.
- 377. *Periodontics*. Yr. and S. 1-4 hr. Clinical experience in the diagnosis and treatment of periodontal diseases.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Fixed Prosthodontics**

Professor Emeritus Adams; Professors Bianco, Connor (Chairperson), and Kwiatkowski; Associate Professor N. Smith; Clinical Instructor Parsons.

- 314. *Fixed Prosthodontics*. S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
- 336. *Fixed Prosthodontics*. Yr. 6 hr. PR: Consent. Lectures and laboratory exercises involving principles and technics of crown and bridge prosthodontics. Topics include types of dental bridges, their indications, and contraindications.
- 357. *Fixed Prosthodontics*. Yr. 2 hr. PR: Consent. Lectures concerned with clinical practice; diagnosis, treatment planning, treatment procedures, ceramics, esthetics, and occlusion.
- 389. *Fixed Prosthodontics*. Yr. and S. 1-6 hr. PR: Consent. Clinical application of the theory and practice of crown and bridge dentistry.

## **Program in Dental Anatomy and Occlusion**

Professor Crout; Associate Professors Foor, Rodeffer, and Stewart; Clinical Instructor Parsons.

- 310. *Dental Anatomy and Occlusion*. Yr. 6 hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.

## **Maxillofacial Prosthodontics**

Professors Connor (Chairperson) and Ghalichebaf.

397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Removable Prosthodontics**

Professor Connor (Chairperson) and Roth; Associate Professors Beaumont, Harper, and Stewart.

313. *Removable Prosthodontics*. I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.

316. *Removable Prosthodontics*. S. 1 hr. Lectures and laboratory practice in maxillomandibular relationships (mandibular and occlusion).

317. *Removable Prosthodontics*. II. 1 hr. PR: Consent. A lecture course providing an introduction to removable partial denture prosthetics.

334. *Removable Prosthodontics*. Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.

341. *Removable Prosthodontics*. S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.

350. *Removable Prosthodontics*. Yr. 2 hr. Lectures concerned with clinical practice of complete and partial removable prostheses.

356. *Removable Prosthodontics*. II. 1 hr. Lectures in the theory and practice of Maxillofacial Prosthodontics and Implants Dentistry.

376. *Removable Prosthodontics*. Yr. and S. 2-6 hr. Continued application of the theory and practice of removable prosthodontics.

397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

# Advanced Education Programs

The Departments of Endodontics and Orthodontics offer programs of advanced study leading to the degree of Master of Science (M.S.). The Department of Oral and Maxillofacial Surgery offers one four-year residency. Seven general practice residencies also are offered by the Department of Hospital Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Graduate Affairs, WVU School of Dentistry, Morgantown, WV 26506.

## Master of Science in Endodontics

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.). The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Graduate Affairs. Applicants will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after December 1.

### Requirements for Admission to the Endodontic Program

1. Graduation from an accredited school of dentistry.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

### Requirements for Degree of Master of Science

1. Fulfillment of general WVU graduate study requirements.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics. A certificate will be awarded only upon satisfactory completion of the research and thesis.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 65 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (15 hours).
6. Must have demonstrated satisfactory clinical competency in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

### Dentistry (Dent.)

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### **Endodontics (Dent.)**

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
490. *Endodontic Teaching*. I, II, S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.
497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

### **Microbiology (M. Bio.)**

317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available. Pathogenic microorganisms, including immunology and antimicrobial agents.

### **Pathology (Path.)**

382. *Oral Histopathology*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

### **Pharmacology and Toxicology (Pcol.)**

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

### **Statistics (Stat.)**

311. *Statistical Methods* 1. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equivalent to Ed. P. 311 and Psych. 311.)

## **Master of Science in Orthodontics**

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.). The program generally requires 34 months (three academic years and two summers) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Postdoctoral Programs. Those applicants approved for admission to the program will be notified December 1.

## **Requirements for Admission to the Orthodontic Program**

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 3.00 is required for admission.
3. Each applicant must file with the department all information requested in the department application form.

## **Requirements for Degree of Master of Science**

1. Fulfillment of general WVU graduate study requirements.
2. Thirty-four months (three academic years and two summers) of residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics. A certificate will be awarded only upon satisfactory completion of the research and thesis.
4. Satisfactory passage of a final oral examination.
5. Completion of a minimum of 60 credit hours. These include 35 hours of orthodontic courses, a minimum of nine hours of selected basic sciences subjects, a minimum of six hours of elective allied subjects, and a thesis (six hours).
6. Demonstration of satisfactory clinical competence in the student's field.
7. Maintenance of a grade level commensurate with graduate education.

## **Anatomy (Anat.)**

315. *Advanced Applied Anatomy*. I. 3 hr. PR: Consent. Advanced descriptive and functional anatomy of the head and neck, especially as it relates to orthodontics. The course stresses the oral-facial region, the skullbase, and the architecture of the skull in relation to masticatory forces.
316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

## **Orthodontics (Dent.)**

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.
419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
420. *Cephalometrics*. S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.

421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. II. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

### **Pathology (Path.)**

397. *Pediatric Oral Pathology*. I. 2 hr. PR: Consent. Lecture and seminar course on inherited diseases and other pathologic situations of oral cavity and face specific for pediatric age group.

### **Statistics (Stat.)**

311. *Statistical Methods* 1. I, II. 3 hr. PR: Math. 3. Statistical models, distributions probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv.to Ed. P. 311 and Psych. 311.)

## **Dental Hygiene**

Dental hygiene, a department of the School of Dentistry, offers a four year curriculum leading to a B.S. in Dental Hygiene. The program is, in part, based in the liberal arts, but it is also a thoroughly professional education. The format of the curriculum is not conventional, in that it includes courses from many academic disciplines. The program prepares students through classroom and practical experiences.

The objectives of the program in dental hygiene include the following:

- To prepare you to perform (with the competence specified by our faculty, the state boards of dental examiners, and employers of dental hygienists) those oral health services legally approved in any state, district, or territory of the United States. These services include observation, recording, prevention, treatment, education, and communication.
- To prepare you to perform with clinical skill any dental auxiliary service, excluding those of a dental laboratory technician.
- To prepare you to teach clinical skills or present information in dental auxiliary education programs.
- To prepare you to coordinate or administer community or public health dental health programs.

- To prepare you to have a keen sense of social awareness and professional responsibility as a dental hygienist.
- To prepare you to continue to develop as a professional, through additional formal training, self-directed study, and independent thought.
- To prepare you to understand and adapt to new developments and changes in the scientific, sociologic, and practical aspects of your profession.
- To prepare you, through a sound educational foundation, for post-baccalaureate education.

## Admission

To get application and reference forms, please write to the Department of Dental Hygiene, West Virginia University, Morgantown, WV 26506, or to the Office of Admissions, Health Sciences Center, West Virginia University, Morgantown, WV 26506. As soon as possible in the year preceding the year you want to enter the program, you should apply and complete the aptitude tests. Forms for the following year are available in September.

If you have no previous study in higher education, you will apply for admission as a freshman at WVU. You must have a diploma from an accredited high school or preparatory school, and we expect you to have these courses listed on your high school transcript:

- English—4 units
- Algebra—2 units
- Plane geometry—1 unit
- Biology—1 unit
- Chemistry—1 unit

We pay particular attention to scholastic achievement in science courses. We also expect applicants to rank in the upper one half of their graduating classes.

We require that you take the American College Testing Program examination or the Scholastic Aptitude Test. We ask for personal references, to be submitted on our reference form. All three references must be sent by the writer of the reference directly to the Department of Dental Hygiene. The Dental Hygiene Admissions Committee reviews all applications. If you are among the most qualified, we will invite you to come to the campus for a personal interview. You will receive a letter stating the date, time, and place of an interview. Competition for admission to our program is intense, and we give preference to residents of West Virginia.

## Degree Completion Program

If you are a registered dental hygienist, we can admit you directly to the Department of Dental Hygiene as a full-time or as a part-time student. To be eligible for the degree completion program, you must have a certificate or associate degree from an accredited dental hygiene program. You can transfer lower division credits (see "Curriculum Plan"). Your acceptance and placement in the program depends upon your academic record and upon the number of spaces available.

When you apply, we ask you to include complete records of previous study. In addition to an official transcript mailed to us by the registrar of your previous school, we ask you to include catalog descriptions of the courses taken. If you are currently enrolled in a certificate or associate degree program, we ask that you include your program of studies. You are responsible for the submission of complete records. .

You can enter the degree completion program twice a year. Applications can be obtained after September 1 of the year preceding application to the program.

## Requirements

To summarize the admission process for the degree completion program:

- Complete the accredited certificate/associate degree program in which you are currently enrolled or offer proof of a previously completed program.
- Present at least a 2.5 grade-point average for all college work attempted. If your grade-point average is below our minimum, you can petition the Dental Hygiene Admissions Committee for special consideration.
- Successfully complete the Dental Hygiene National Board Examination and submit your score.
- Submit two letters of reference, one from the director of your previous program and one from a clinical instructor. If you have professional experience, substitute a letter from your employer for either of the above.

The Admissions Committee may ask you to come for a personal interview before they make a final decision on your application.

## Promotion

At the end of every semester, the Dental Hygiene Committee on Academic Standards reviews the status of every student in the program. The committee recommends promotion or retention to the Dean of the School of Dentistry.

If you fulfill all course requirements and have the necessary grade-point averages, your promotion is unconditional. The necessary grade-point averages for each year are as follows:

Cumulative grade-point average: after first year 1.5; for promotion to second year 1.75; for promotion to third year 2.0; for promotion to fourth year and 2.0 for graduation.

Science/Dental Hygiene grade-point averages are the same for yearly promotion.

The science/dental hygiene average is based on grades earned in these courses or their equivalents: Anatomy 101; Biology 2; Chemistry 11, 12; Dentistry 300; Microbiology 26; Pathology 128, 129; Pharmacology and Toxicology 160; Physiology 141; Dental Hygiene 1-220.

If you do not qualify for unconditional promotion, you may be placed on probation. Probationary status means that you are allowed to make up your deficiencies or repeat the year. If, after repeating the year, you do not reach the minimum grade-point standard, the committee will reevaluate your status and potential.

The Department of Dental Hygiene reserves the right to suspend or require pre-medial work of any student who does not perform at a level satisfactory for patient care.

## Dental Hygiene Suggested Curricula

### First Year

<i>First Semester</i>	<i>Hrs.</i>
Orien. 2	1
Engl. 1	3
Cluster A	3
Dent. Lit. 66	1
Math. 3 or 23	3
Chem. 11	4
Dent. Hy. 1	2

<i>Second Semester</i>	<i>Hrs.</i>
Biol. 2	3
Biol. 4	1
Chem. 12	4
Oral Anat. 85	3
Nutr. 71	3
Cluster B (Soc. 1)	3

**Second Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Anat. 101	4	Physio. 141	4
Cluster B (Psych. 1)	3	Oral Hist. 90	3
Dent. Hy. 105		Pharmacol. 160	3
(Theory & Pract. of Prevent.)	2	Dent.Hy. Technics 125	4
Microbiol. 26	4	Eng. 2	3
Cluster A	3	Dent. Nrsng. Technics 120	1
SPA 80	3		
	<hr/> 19		<hr/> 18

**Third Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Periodont. 168	1	Periodont. 169	1
Cluster B (Psych. 141)	3	Dent.Hy. Teaching	
Path. 128	2	Methods 174	2
Dent. Radiol. 152	2	Path. 129	3
Anesth. 300	1	Expanded Functions 161	2
Public Health 172	2	Cluster A	3
Dent. Materials 160	3	Dent. Health Ed. 150	3
Dent. Hy. Clin. Methods 162	2	Clin. Dent. Hy. 164	2
Clin. Dent. Hy. 163	2		
	<hr/> 18		<hr/> 16

**Fourth Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Adv. Dent. Hy. Clin.		Adv. Clin. Dent.	
Methods 204	1	Hyg. 206	3-4
Advanced Clin.		Dent. Hy 205	5
Dent. Hy. Pract. 202	2		
Cluster B	3		
Cluster A	3		

DH Elect. 13-14 hours elective credits in Dental Hygiene during the fourth year.

**Courses of Instruction in Dental Hygiene**

Professors Komives (Chairperson), DeBiase, Gladwin, and Graves; Associate Professor Spear; Assistant Professors Raymond; Clinical Instructor Mullins; School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this catalog or in the *WVU Undergraduate Catalog*.)

**Dental Hygiene (Dnt.Hy.)**

- 1. *Orientation to Dental Hygiene*. I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
- 66. *Technical Expression and Dental Literature*. I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.

85. *Oral Anatomy*. II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology*. II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention*. I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 3 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
160. *Dental Materials*. I. 3 hr. PR: Enrollment in dental hygiene. Lecture and laboratory covering the science and manipulation of dental materials. (2 hr. lec., 1 hr. lab.)
161. *Expanded Functions*. II. 2 hr. PR: Dnt. Hy. 160. Lecture and laboratory covering specialty topics in dentistry for expanded functions, four handed dental assisting, and the placing and carving of amalgam and resin restorations in dentiform teeth. (1 hr. lec., 1 hr. lab.)
162. *Dental Hygiene Clinical Methods*. I. 2 hr. PR: Dnt. Hy. 125. Principles of oral prophylaxis, instruction in the care of special patients, use of diagnostic aids, and nutritional counseling. (2 hr. lec.)
163. *Clinical Dental Hygiene 1*. I. 2 hr. PR: Dnt. Hy. 125. Clinical application of dental hygiene principles and techniques. (2 hr. lab.)
164. *Clinical Dental Hygiene 2*. II. 2 hr. PR: Dnt. Hy. 162, 163. Clinical application of dental hygiene principles and techniques. (2 hr. lab.)
168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of

practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.

204. *Advanced Dental Hygiene Methods. I.* 1 hr. PR: Senior enrollment in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings.
205. *Advanced Clinical Dental Hygiene 1.* I. 5 hr. PR: Senior enrollment in dental hygiene. Clinical experience in traditional and expanded duties; pre- and post-operative care of surgical patients, and radiology. (5 hr. clinic.)
206. *Advanced Clinical Dental Hygiene 2.* II. 3-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures. (3-4 hr. clinic.)
220. *Special Topics in Dental Hygiene.* I, II. 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

## **Master of Science in Dental Hygiene**

### **Areas of Specialization**

Office Management	Educational Administration
Special Patients	Basic Sciences

The School of Dentistry and its Department of Dental Hygiene offer a program of advanced study and specialized training leading to the degree of Master of Science. This program requires the completion of a minimum of 36 semester hours through full-time or part-time enrollment in the School of Dentistry. It is designed to qualify dental hygienists for careers in teaching, administration, research and management.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Research and Graduate Affairs, School of Dentistry. Applications should be filed by July 1 for admission in the fall semester and by November 1 for spring semester enrollment.

### **Requirements for Admission to the Dental Hygiene Program**

1. Graduation with a baccalaureate degree in dental hygiene from an accredited dental hygiene program *or* graduation with a baccalaureate degree in another field of study from an approved institution of higher education while holding a certificate or associate degree in dental hygiene from a program fully accredited by the American Dental Association, Commission on Dental Accreditation.

2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 2.5 or above is required.

3. Completion of one of the following standardized tests: the Graduate Record Examination (GRE) general aptitude test with a score of 1,000 or above *or* the Miller's Analogy Test with a score of 50 or above.

4. Submission of all information requested in the graduate application form with the Office of the Associate Dean.

### **Requirements for Degree of Master of Science**

1. Completion of a minimum of 36 semester credit hours: 18-24 basic required credit hours and 12-18 credit hours in an elective area(s) of dental

hygiene specialization. Four elective areas of specialization are offered. The student may choose one or two of these areas of study. Courses within these specializations are taught by a number of schools within the University. An individualized program will be devised for each student which must conform to one of the following options:

- a. Thesis: A minimum of 30 semester credit hours, plus a maximum of six hours in research leading to an acceptable thesis. Oral defense of the thesis is required.
  - b. Non-thesis: A minimum of 36 semester credit hours, with no thesis required.
2. Successful completion of a comprehensive examination for non-thesis students consisting of a series of tests covering all areas specified in the plan of study. This examination will be administered after the majority of the student's coursework has been completed.
  3. Achievement of a 3.0 GPA or an overall academic average of at least B in all work attempted in the master's program. A grade of C or below in two courses will require a faculty review of the student's progress. A third C will result in suspension from the program.
  4. Removal of all conditions, deficiencies and incomplete grades. Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

### **M.S.D.H. Curriculum**

#### **Basic Requirements**

**Total 36 Credit Hours**

**18-24 Credit Hours**

Educational Psychology 311— <i>Statistic</i> .....	3
Educational Psychology 330— <i>Test and Measurement</i> .....	3
Dental Hygiene 380— <i>Critical Issues in Health Care</i> .....	3
Dental Hygiene 381— <i>Expanded Functions</i> .....	3
Dental Hygiene 220— <i>Personal Computing for the D.H.</i> .....	3
Dental Hygiene 385— <i>Research Methods for the D.H.</i> .....	3
Dental Hygiene 397— <i>Research (Thesis) (6)</i> .....	3

#### **Elective Area(s) of Dental Hygiene Specialization**

**12-18 Credit Hours**

Dental Hygiene 391 and Dentistry 397 Courses

Courses taught by the Colleges of Business and Economics, Human Resources and Education, and School of Medicine

Courses taught by the Department of Community Health

Multidisciplinary Studies Courses

### **Dental Hygiene (Dnt. Hy.)**

220. *Microcomputing for Dental Hygienists*. II, S. 3 hr. PR: Consent. Introduction to microcomputing with hands-on experiences in patient record keeping, accounting, insurance handling and word processing.
380. *Dental Hygiene Seminar and Practice 1*. I. 3 hr. PR: Graduate standing and consent. Examination of the critical environmental issues affecting the future of health care; particular impact on oral health care trends will form major focus. Dental hygiene clinical practice is also included.
381. *Dental Hygiene Seminar and Practice 2*. II. 3 hr. PR: Dnt. Hy. 380. Expanded services for the dental hygienist with emphasis on restorative and periodontal functions.
385. *Research Methods for the Dental Hygienist*. II. 3 hr. PR: Ed. Psych. 311. Methods and techniques of research in dental hygiene. Major emphasis on planning and evaluating health programs, conducting oral health surveys, designing experiments and critically analyzing research results.
397. *Dental Hygiene Research*. I, II, S. 3-6 hr. PR: Consent. Students design a research protocol, conduct experimental research and prepare a thesis of original dental hygiene research.

# School of Medicine

Robert M. D'Alessandri, Dean

James K. Hackett, Associate Dean, Finance and Administration

George A. Hedge, Associate Dean, Research and Graduate Studies

Anthony G. DiBartolomeo, Associate Dean, Clinical Affairs

William O. McMillan, Jr., Associate Dean, School of Medicine, Charleston Division

James M. Shumway, Jr., Assistant Dean, Curricular Affairs

James M. Stevenson, Associate Dean, Development and Continuing Medical Education

John W. Traubert, Associate Dean, Student and Curricular Affairs

## Degrees Offered

M.D. in Medicine

M.S., Ph.D. in Anatomy

M.S., Ph.D. in Biochemistry (Medical)

M.S., Ph.D. in Microbiology (Medical)

M.S., Ph.D. in Pharmacology and Toxicology

M.S., Ph.D. in Physiology (Medical)

Ph.D. in Biomedical Sciences

B.S. in Physical Therapy

B.S., M.S. in Medical Technology

## Historical Background

The West Virginia University School of Medicine started in 1902 as an affiliate with the College of Physicians and Surgeons of Baltimore. In 1912, the School of Medicine had its formal beginnings as an independent school offering the first two years of basic sciences medical curriculum. The clinical years were completed at another institution. The School of Medicine moved to the current Health Sciences Center in 1957 and inaugurated the four year curriculum in 1960, which coincided with the opening of the 550 bed University Hospital. The first M.D. degrees were awarded to 15 students in 1962.

In 1945 the School of Medicine began a course of study leading to a Bachelor of Science in Medical Technology. The first graduates were awarded a combined degree by the School of Medicine and the College of Arts and Sciences. The program of medical technology in the School of Medicine was established in 1961.

The Division of Physical Therapy accepted its first class of 16 students in 1970. It offers the final two years of a baccalaureate program leading to the degree of Bachelor of Science in Physical Therapy.

In 1972 the Charleston Area Medical Center became affiliated with West Virginia University. This resulted in the West Virginia University Health Sciences Center—Charleston Division which offers a variety of third and fourth year clerkships for medical students. Approximately one third of each class go to Charleston for the third and fourth years of medical education.

The Wheeling Division of the West Virginia University Health Sciences Center was established in 1974 and offers a variety of elective opportunities for students in the fourth year.

## Facilities

The West Virginia University Health Sciences Center has excellent clinical facilities. The Ruby Memorial Hospital offers the most sophisticated medical

technology available, including magnetic resonance imagery, lithotripsy, laser surgery, and the necessary support technology. The Chestnut Ridge Psychiatric Hospital allows the entire spectrum of psychiatric and behavioral problems to be managed. The Mary Babb Randolph Regional Cancer Center, completed in 1990, provides a facility totally dedicated to the diagnosis and treatment of cancer. Dedicated research and teaching space will allow outstanding cancer scientists to work toward the goals of prevention and cure. Areas of cellular biology, immunology, monoclonal antibody, gene tracking, and recombination research are ongoing at the Cancer Center.

A sixty bed inpatient rehabilitation center has been completed in the spring of 1991. Students now have the opportunity to investigate occupational medicine as a career. The Department of Occupational Medicine has recently evolved, which complements all of the other existing programs.

**Degree Programs**

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

The M.D.-Ph.D. program is available to those students who show exceptional interest and scholarly promise. All of the admission requirements of the School of Medicine and the specific graduate program apply. Students may apply to the M.D./Ph.D. program any time after acceptance to medical school. It is to be understood that the following information applies only to students in the School of Medicine who are enrolled in the prescribed curriculum which culminates in the M.D. degree. All other students, undergraduates, or graduates enrolled in other programs in the School of Medicine are governed by the policies found elsewhere in the *Health Sciences Center Catalog*.

**Accreditation**

The West Virginia University School of Medicine is accredited by the Liaison Committee on Medical Education (L.C.M.E.).

**Admission Requirements**

The student preparing for any career in the health professions must have a keen interest in the sciences. Science courses taken in high school should include as many biology, chemistry and physics courses as possible. A good background in mathematics is strongly recommended.

The following courses are required for consideration of an application to Medical School.

English .....	6 semester hours or equiv.
Biological Sciences (with lab) .....	8 semester hours or equiv.
Inorganic Chemistry (with lab) .....	8 semester hours or equiv.
Organic chemistry (with lab) .....	8 semester hours or equiv.
Physics (with lab) .....	8 semester hours or equiv.
Social or Behavioral Sciences .....	6 semester hours or equiv.

A quantitative background, including calculus, is recommended. A total of 90 semester hours, exclusive of ROTC and general physical education, is required. All required courses must be passed with a grade of "C" or better.

An excess of credit hours or higher degrees does little to offset the disadvantage of low grades when being considered for admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have

been subject to suspension from West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Admissions Committee.

### **Pre-Admission Tests**

The scores of the Medical College Admissions Test (MCAT) are one of the factors used by the admissions committee in considering an applicant for admission. The MCAT must be taken within two years of applying to medical school. It is recommended that students take the MCAT during the spring of their junior year in college. This allows for a repeat examination in the fall if necessary. Waiting until fall to take the test could jeopardize an applicant's opportunity since no application for admission is given final consideration until MCAT scores are received by the Admissions Committee. The MCAT score must be recorded prior to closing of admissions on December 1.

Information concerning the time and place of the test can be obtained from your premedical advisor or committee or the Office of Admissions and Records.

### **Application Procedure**

The admission process is initiated by completing the American Medical College Application Service (AMCAS) forms. AMCAS packets may be obtained from the Office of Admissions and Records of the West Virginia University Health Sciences Center, or through most preprofessional advising offices.

Application for admission in August, 1992, should be made at the end of the 1990-91 school year. The last date for filing an application is December 1st. The applicant should file as early as possible making certain that recent MCAT scores, current transcripts, and letters of recommendation are available to the Admissions Committee.

Preference in admission is given to West Virginia residents and those non-resident applicants who have strong ties to the state. No one specific factor is used to determine admission. However, careful consideration is given to those personal qualifications which apply to the study and practice of medicine. The criteria for admission include academic performance, course load, letters of recommendation, MCAT scores, motivation, interpersonal skills, and a personal interview.

No applicant is admitted before an interview by the Admissions Committee. All residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Admissions Committee, who notify the applicant of the time and place of the interview. Interviews and consideration of applicants begin in September.

If an applicant is denied admission or does not enroll after acceptance, he/she must reapply in the regular manner for consideration in a subsequent year.

### **Advanced Standing**

Advanced standing positions are offered only in very exceptional circumstances and only to students currently attending L.C.M.E. accredited medical schools. A request for transfer is usually considered during the second year. The application must be received no later than May 15. The applicant must present certification of good academic and professional standing in the school from which he/she is transferring. An official transcript of all prior medical school work is required from all medical schools attended. In addition, the results of Part I of the National Board of Medical Examiners must be available before an application can be finalized. A passing score is required.

## **Conditions Following Acceptance**

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Admissions Committee.

The student must be aware that furnishing or causing to be furnished false or incorrect information for the purpose of the School of Medicine application constitutes grounds for disciplinary actions, including, but not limited to, expulsion or revocation of the acceptance.

Students in the School of Medicine agree to abide by the provision of an integrity code, which requires ethical and moral standards of conduct in all situations. Each student is required to return a signed statement to the Office of Student and Curricular Affairs, indicating the student has read and understands the student Professional and Academic Integrity Code of the West Virginia University School of Medicine. The code and copies of the statement are available in the Office of Student and Curricular Affairs in the School of Medicine.

Prior to matriculation, all students must complete certain prescribed immunization and diagnostic procedures.

## **Graduation Requirements**

### **Promotion Procedures (Evaluation of Student Progress)**

The Committee on Academic and Professional Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

The Committee on Academic and Professional Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic and Professional Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the Committee, the student's overall performance does not meet the academic/professional standards of the School of Medicine.

No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

All courses and all classes at the School of Medicine are graded as Honors (H), Satisfactory (S), or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The H, S, and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

Readmission of a dismissed student is the prerogative of the Admissions Committee after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic and Professional Standards.

Nondisciplinary matters are governed by the concept of academic due process.

Upon concurrent recommendation of the Admissions Committee, the Committee on Academic and Professional Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession. In all other matters, due process principles shall apply. For further information the reader is referred to "The Policy on Academic Standards" governing the M.D. degree program at West Virginia University School of Medicine, which is available at the School of Medicine Office of Student and Curricular Affairs.

It is the policy of the School of Medicine that the departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. In addition to the departmental examinations, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion.

All students who have a health problem which they feel may be causing difficulty with their academic progress are strongly advised to notify the Associate Dean for Student and Curricular Affairs.

### **Grade Requirements**

A grade of Honors (H), Satisfactory (S), or Unsatisfactory (U) is recorded for each course. The grade of Incomplete (I) is given when the instructor believes that the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure (unsatisfactory) unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule). It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses. In addition, each department files in the Office of the Associate Dean for Student and Curricular Affairs a narrative evaluation of the work of each student.

### **Special Requirements**

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners (NBME) examination is the mechanism by which a license may be obtained. The examination is given in three separate parts. Part I is offered at the end of the second year of medical school. The student is required to take the Part I as a candidate for National Board certification at that time. Students must record a passing grade on Part I before they may continue on to the third year. Ordinarily, students should take Part II in September of their fourth year. Under special circumstances, third year students may take Part II in April of their third year even though they will not have completed all of their clinical clerkships. In the event that there is a question about when to take Part II, the student is advised to contact the Office of Student and Curricular Affairs in the School of Medicine. Part II of the NBME examination is required as a comprehensive test in clinical sciences and must be taken and passed before graduation.

The overall performance of the student on the NBME examinations will be taken

into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

### **Departure from Scheduled Work**

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Director of Admissions and Records, Health Sciences Center, for record. The Office of Student and Curricular Affairs in the School of Medicine must also be notified.

Interruption of academic work must be approved by the Office of Student and Curricular Affairs.

### **Curriculum**

The field of medicine is rapidly changing. The following curriculum outline is the plan that is presently in place. However, the medical school curriculum at West Virginia University will change as needs dictate.

### **First and Second Years**

The curriculum in medical school can be divided into two phases. The first two years are devoted largely to the basic sciences, including anatomy, biochemistry, physiology, microbiology, pathology, and pharmacology. There is an Introduction to Clinical Medicine course during the second year, as well as courses in Behavioral Science and Genetics. See the Medicine I and Medicine II charts for representative schedules.

### **Clinical Years**

The last two years of study take place in the clinics and hospitals where students have the opportunity to help diagnose and treat patients under supervision of the full-time faculty and staff.

### **Third Year**

The third year is structured and the student must spend a designated period of time in each of the major clinical disciplines. This gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students are selected during their first year to spend the third and fourth year at the Charleston Division of WVU Health Sciences.

### **Fourth Year**

The fourth year is a partially structured and partially elective year. Each student works with an adviser to select the program best suited to the individual's abilities and goals. The courses selected are subject to the approval of the Associate Dean in the Office of Student and Curricular Affairs.

Four months of the senior year are committed to required clerkships which include Internal Medicine or Pediatric Sub-Internship; Critical Care/Anesthesia; Surgical Sub-specialties; and Primary Care. The remainder of the senior year is elective.

Six months of the senior year must be spent at clinical sites on the campuses at Morgantown and Charleston, or at approved teaching sites throughout West Virginia.

Rural rotations may be required of all students. A *Catalog* is available from the Office of Student and Curricular Affairs that lists the approved electives.

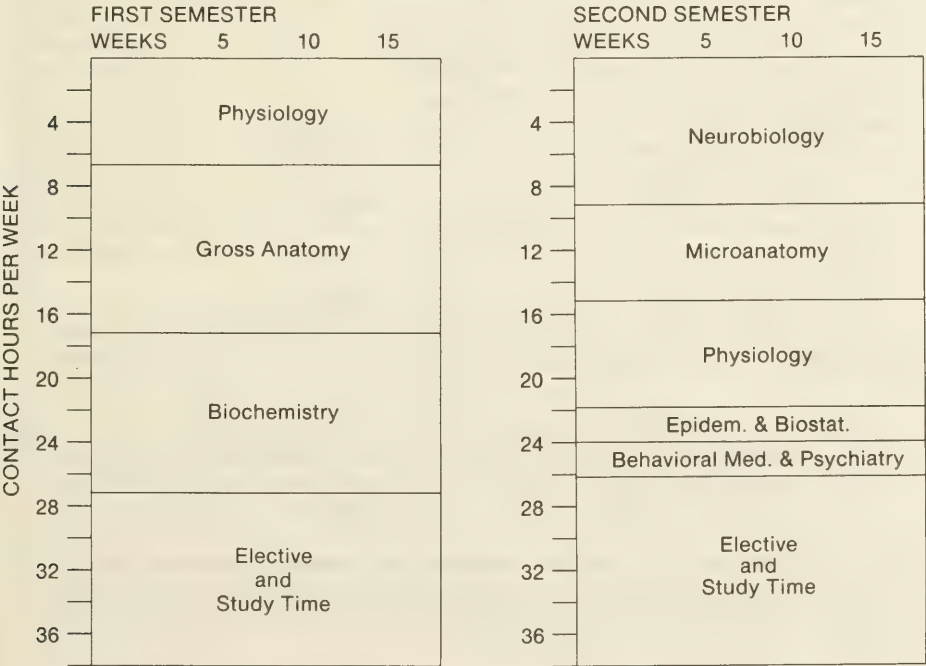
Students interested in other extramural opportunities are advised to consult with the fourth-year curriculum coordinator in the Office of Student and Curricular Affairs. Elective time must be spent in L.C.M.E. (Liaison Committee on Medical Education) or JCAH (Joint Council of American Hospitals) accredited institutions. Foreign rotations, regardless of sponsorship, are limited to four weeks credit.

Every fourth-year student has the opportunity for two weeks of vacation. The student may alternatively choose a clinical exercise for vacation time.

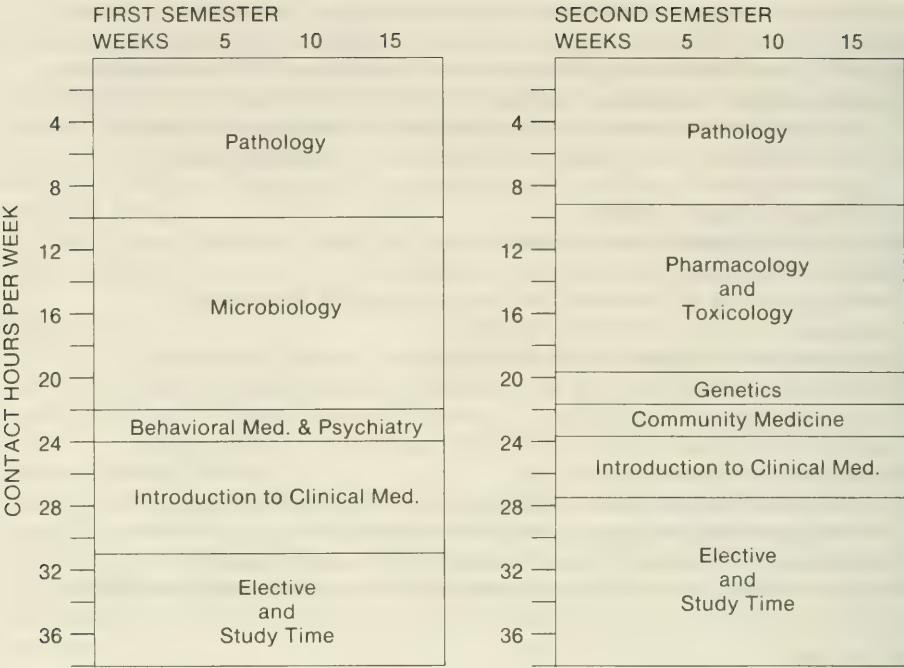
**Committees (Chairpersons)**

- Academic Standards: Gunter N. Franz.
- Biomedical Research Support: Gregory W. Konat.
- Dean's Committee to Clarksburg VA Hospital: James M. Stevenson.
- Curriculum Committee: Ronald D.Gaskins.
- Executive Faculty: Robert M. D'Alessandri.
- Educational Advisory: Robert M. D'Alessandri.
- Faculty Promotion: C. Robert Craig.
- Medical School-Hospital Liaison to Student Body: Robert M. D'Alessandri.
- Admissions Committee: David S. Hall.
- E. J. Van Liere Student Research Convocation: Wilbert E. Gladfelter.
- Continuing Medical Education: James M. Stevenson.
- Admissions Committee for Medical Technology: Frances B. Juriga.
- Admissions Committee for Physical Therapy: Marybeth Harris, and John Petronis.

**MEDICINE I**



MEDICINE II



MEDICINE III  
Clerkships

WEEKS	
12	Medicine
12	Surgery With 2 weeks of Neurology
6	Behavioral Medicine and Psychiatry
6	Obstetrics and Gynecology
6	Pediatrics
6	Family Medicine with 2 weeks of Pediatrics OPD
48	TOTAL

## **Courses of Academic and Clinical Instruction**

### **Anesthesiology (Anes.)**

Professors Stullken (Chairperson), Broadman, Eller, Martinez, Rodman, and Smith; Associate Professor Graf; Assistant Professors Bennett, Bezouska, Docherty, Gilman, Gross, Hackett, McFarlane, Stalenski; and Vance; Clinical Professors Berkebile, Cwik, IUrving, Lilly, Saldanha, Weeks, and Zeedick; Clinical Associate Professors Bellotte, Bettinger, Hall, Rajaratnam, Tercan, and Westmoreland; Clinical Assistant Professors Carter, Douglass, Dua, Geronilla, Huber, Kasraie, Kessel, Long, Mantia, Martin, Mathew, Neal, Reddy, Schienholtz, and Varga; Clinical Instructors Chevuru, Delgra, Trei, Valcarcel, and Walker.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)

331. *Clinical Clerkship in Anesthesiology/Acute Medicine.* (Third Year.) CR.

A. *Lectures to Third-Year Students on Topics Related to Anesthesiology.*

B. *Clinical Clerkship in Acute Medicine.* Preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology, toxicology, fluid and blood therapy, and pain management. Seminars and practical exercises in emergency cardiac life support clinical experience in ICU or OR. (Duration: 2 weeks.)

399. *Selective Experiences in Anesthesiology.* (Fourth Year.) CR. See Conjoined Courses.

### **Behavioral Medicine and Psychiatry (B.M.P.)**

Professors Azzaro, Flink, Glover, Kelley, Morgan, Quarrick, and Stevenson (Chairperson); Associate Professors Bradlyn, Claude, Clausell, Desai, Ellis, Fidler, Franzen, Kommor, Linton, Reamy, Robison, Seime, Smith, P. Sullivan, C. Sullivan, Tinnin, and Walker; Assistant Professors Bhanot, Blanton, Byrne, Cloonan, Dash, Dickey, Griffith, Edelman, Harris, Haut, Keefover, King, McClung, McFarlane, Nease, Newfield, Nickell, Pollard, Rankin, Roberts, and Trumbull; Adjunct Professor Levine; Adjunct Associate Professors Barnette and Elkins; Adjunct Assistant Professors Faris, Hamilton, Harms, Kent and Stephen; Clinical Professors Ayd, Bateman, Carter, Comer, Haynes, Marquis, Mortell, Rossman, Weise, Withersty, and Wurmser; Clinical Associate Professors Collins, Edelstein, Edwards, Faheem, Goodman, Greenwood, Ingersoll, Kerns, Knapp, Nahemow, Panepinto, Settle, Smith, Strokes, and Ward; Clinical Assistant Professors Allen, Almond, Brailier, Capage, Chambers, Davis, Dickey, Donovan, Dunning, Fawley, Fink, Frye, Guy, Hamilton, Hasan, Hill, Hutton, Kovacevich, Lavine, MacCallum, McCluskey, McNeer, Morgan, Naviaux, Neilan, Panepinto, Portz, Puzzuoli, Sine, Smith, Smith, Soule, Stein, Tellers, Webb, and Williams; Clinical Instructors Caruso, Fawley, Gantt, and Hunter; Instructors Berry and Riley.

311. *Introductory Psychiatry.* (First Year.) II. 2 hr. An examination of normal psychological development; consideration of the doctor-patient relationship and physician impairment. A preceptor model is used to introduce the patient to interviewing, emphasizing the mental status examination.

321. *Introductory Psychiatry.* (Second Year.) I. 2 hr. Continuation of B.M.P. 311 with an in-depth look at basic science and social science parameters in psychiatry. Major clinical syndromes along with biological and environmental concomitants are presented. Advanced psychiatric interviewing is the focus of the preceptorship.

341. *Clinical Clerkship in Psychiatry.* (Third Year.) CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry, and participation and treatment of psychiatric disorders. Emergency Room responsibility.

## **Community Medicine (C. Med.)**

Professors Pearson (Chairperson), Battigelli, Butcher, Carlton, Kotchen, Riggs, and Wicclair; Adjunct Professor Goodwin; Associate Professors Hall, Reger, Simon, Smith (Emeritus), Wiles (Emeritus), and Wyant (Assistant Chairperson); Clinical Associate Professors Cooley, Greenwood, Rosenberg, Schwab, and Schwerha; Adjunct Associate Professor Graham; Assistant Professor Singleton; Research Assistant Professor Pollard and Weinstein; Clinical Assistant Professors Atkins, Avashia, Daniels, Scobbo, and Tablante; Adjunct Assistant Professors Amandus, Attfield, Harper, Kennedy, Nottingham, Rabkin, and Savage; Clinical Instructor Pettry; Adjunct Instructor Dacey, Melton, and Wilson.

311. *Methods of Biostatistics*. I. 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $\chi^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (Equiv. to Stat. 311.)
312. *Community Medicine*. (Second Year.) II. 2 hr. Open to limited number of graduate students. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental, and occupational factors. The organization of public health and medical care.
322. *Epidemiology and Biostatistics*. (First Year.) II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.
391. *Advanced Topics*. 1-6 hr. PR: Consent.
399. *Critical Review of Literature*. I & II. 1 hr. PR: MD or permission of instructor. A review of current literature in occupational and environmental medicine, focused on analysis of validity and procedures followed; scrutiny of research reports, their design, methodology, data handling, documentation and discussion of the data base. 1 hr conf.
401. *Law and the Workplace*. *Summer Session I*. 1 hr. PR: MD degree, graduate standing, or permission of instructor. Philosophy, content and procedures of current judicial bodies relevant to the practice of medicine in the industrial society, developed through a series of lectures followed by extensive discussion involving the students from different curricular backgrounds. 1 hr. sem.
412. *Medical Aspects of Environmental Health*. I & II. 1 hr. PR: MD degree or permission of instructor. A review of issues illustrating the responsibilities and professional interaction of physicians in identifying, managing and preventing casualties from environmental causes in air, water, soil, food, pesticides and related subjects. 1 hr. lec.
491. *Advanced Study*. 1 hr. PR: Consent.
496. *Seminar in Occupational Medicine*. I & II. 2 hr. PR: MD degree or permission of instructor. Current topics in occupational medicine practice, diagnostic, managerial, preventive and epidemiological aspects, reviewed in a format of clinical discussion; special attention to problems relevant to geographic and economic areas; multidisciplinary approach to clinical problems.
497. *Research in Occupational Medicine*. I & II. Variable hour. PR: Consent. Exercises in investigational medicine, illustrating the requirements and procedures relevant to the description and quantification of current issues in occupational medical practice.

## Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of the medical curriculum. (Graded as H, S, or U.) A one month rotation in Primary Care, Critical Care, Surgical Subspecialty, and either a Medicine or a Pediatric Subinternship are all required in the fourth year. The student works with an adviser to select the remainder of the individual program. This program must also be approved by the Associate Dean in the Office of Student and Curricular Affairs. The year is composed of ten one-month blocks, six months of which must be spent in programs in West Virginia. Selections are available in all Departments within the School of Medicine. A *Catalog* is available that lists the specific guidelines for the fourth-year curriculum.

## Family Medicine

Professors Lewis (Chairperson), Ponte, and Traubert; Associate Professors Arbogast, Cleavenger, Crosby, Nath, Palmer, Sebert, and Swinker; Assistant Professors Cutlip, Dattola and Doyle; Clinical Professors Davis, Fullmer, Hall, Jarrett, Simmons, and Tully; Clinical Associate Professors J. Cavender, Eckert, Hess, Kellas, Mangus, Rashid, and Warren; Clinical Assistant Professors Arnett, Arthurs, Atkins, Benadum, Bennett, Bird, Blum, Bowers, Brooks, Byler, Cannarella, Clark, Commerci, Conley, Crigger, Cook, Dababnah, Davis, Day, Domenick, Doyle, Dushkoff, Elliott, Fortner, Gais, Golden, Gross, Harris, Heavner, Helsley, Horner, Hofreuter, Hopper, J. Kelley, Kilkenny, Klein, Lewis, Liebig, Lindsay, Livengood, McNeill, Merrifield, Niess, Reed, Reisenweber, Ritz, Roberts, Saver, Seen, Sine, Tallman, Walkup, West, and Wilson; Clinical Instructors Casto, Hanna, Hayes, Hokanson, Jackson, Kelley, Leveaux, LeVos, Stearns, and Wack.

## Medicine (Med.)

Professors Battigelli, Chideckel, D'Alessandri (Dean, School of Medicine), DiBartolomeo, Hoeldtke, Jain, Jones (Vice President, Health Sciences), Khakoo, J. M. Kotchen, T. A. Kotchen (Chairperson), Lapp, D. Z. Morgan, E. Morgan, Murgu, Overbeck, Raich, Riggs, Shultz, Stevenson, Ullrich, and Welton; Professor Emeriti Albrink, Flink, and Point; Associate Professors Abrons, Banks, Brick, Chillag, Crowell, Dedhia, Feder, Ferrari, Funk, Gaskins, Grubb, Hogan, Morise, Moss, Neely, Powers, Previll, Rector, Rogers, Schmidt, Shumway, Smego, Sorkin, Sullivan, and Teba; Assistant Professors Antonelli, Auber, Balaan, Blum, Boegehold, Borsch, de Andrade, Elnicki, Espiritu, Farr, Grondin, Halbritter, Istfan, Jackson, Kovach, Kung, Layne, Liput, Mansmann, Maxwell, Nickell, Rademacher, Richards, Shamma'a, and Shockor; Research Assistant Professor Dubey; Research Instructor Hsueh, and Reddy; Adjunct Associate Professors Castellan, Fisher, Hodus, and Petsonk; Adjunct Assistant Professors Jordan, and Parker; Clinical Professors Emeriti Blatchley, Johnson, and Pushkin; Clinical Professors Artz, Avington, Basu, Carter, Gaziano, Georgiev, Jubeliner, Koppel, Latos, Lee, Lewis, Marshall, McMillan, Pfister, Revercomb, Santer, Saville, Selinger, Skaggs, Valentine, Warren, and Zaldivar; Clinical Associate Professors Avashia, Byrd, Chvasta, Duncan, Farmer, Gainer, Hall, Houston, Jackson, Jones, Kaplan, Koliner, Lamb, MacCallum, McCabe, McJunkin, Noble, Palmer, Parsons, Patel, Perrone, Renn, Schwerha, Scobbo, Szego, Thakker, Thrush, Vasquez, and Warren; Clinical Assistant Professors Ahmad, Altmeyer, Barnett, Beall, Burke, Carlin, Cassis, Chaddah, Chokkavelu, Church, Crisalli, Crotty, Cunningham, Devabhaktuni, Drews, Duffy, Farris, Ferguson, Ganzer, Harman, Harper, Hijab, Iyer, Jaworski, Jayakumar, Keegan, Kerns, Lee, Lewis, Liebeskind, Lilly, Lyons, Masilamani, Mazzocco, McCagh, McCormick, McCowan, McHugh, Mehrotra, Milroy, Modi, Namay, Namay, Nellhaus, Norman, Nseir, O'Keefe, Pierson, Rademacher, Rahman, Roberts, Roidad, Romano, Schaeffer, Schwartz, Seibert, Stem, Stephens, Treharne, VanGilder, Viranda, Wallia, White, and Wright; Clinical Instructors Abrahams, Arthur, Bivens, Devanathan, Farooqi, Jimenez, Kolanko, Lim, Massullo, Nayar, Reynolds, Sabo, Shah, Skaff, and Weaver.

321. *Introduction to Clinical Medicine—Physical Diagnosis*. I, II. 5 hr. PR: Consent. Formalized introduction to clinical medical sciences; focus on application of basic science to clinical practice. Skills in history taking and physical examination developed through preceptorship/practicum.

331. *Clinical Clerkship in Medicine*. (Third Year.) CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the departments. Clerkship in medicine occupies 12 weeks.
370. *Medical Genetics*. II. 2-4 hr. PR: Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as Gen. 370, Pedia. 370, CC MD 370.)

## **Neurological Surgery**

Professors Kaufman (Chairperson) and Bloomfield.

## **Neurology (Neuro.)**

Professors Azzaro, Bodensteiner, Gutmann (Chairperson), Martin, Riggs, and Schochet; Associate Professors Breen and Brick; Assistant Professors Chung, Cutlip, Gutierrez and Keefover; Clinical Professors Heck and Poffenbarger; Clinical Associate Professors Crosby, Kettler, and Pratt; Clinical Assistant Professors Govindan, Grouse, Loudon, Morehead, Morgan, Stiller, Swisher, and Tellers.

341. *Clinical Clerkship in Neurology*. (Third Year.) CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of outpatients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology.

## **Obstetrics and Gynecology (Obst.)**

Professors Butcher, Cox, Gibson (Chairperson), Glover, Gordon, Reamy, and Mairs; Associate Professor Toffle; Associate Professor Emeritus Foss; Assistant Professor Soret and Payne; Clinical Professors Behnam, Bonney, Chambers, Clark, Crites, Giles, Giustini, Maxson, Palladino, Sandhu, and Withersty; Clinical Associate Professors Arceo, Ashraf, Athari, Battaglino, Berry, Cunningham, Grubb, Fulcher, Keefer, Pearcy, Stone, Thomas, Turner, Wanger, and Williams; Clinical Assistant Professors Busch, Bush, Georgiev, Hitt, Hunter, Jones, and Van Riper; Clinical Instructors Bonasso, and Gyimesi.

341. *Clinical Clerkship in Obstetrics and Gynecology*. (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students participate in the care of all inpatients and attend all departmental clinics.

## **Occupational Medicine**

Professor Battigelli (Chairperson).

## **Ophthalmology (Ophthal.)**

Professors Weinstein (Chairperson) and Colasanti; Associate Professors Odom, and Jabbour; Assistant Professors Charlton, Corin, Feghali, Nork, Macsai, and Schwartz; Clinical Professors Blaydes, Magee, O'Connor, Ryan, Strickland, Trotter, and Winkler; Clinical Associate Professors Hamrick, Nugent, Raju, Shepherd, and Schwab; Clinical Assistant Professors Cassis, Fiery, Fogle, Genin, Pangilinan, Rashid, Strauch, Tarakji, Tipler, and Toma; Clinical Instructors Caudill, Francke, Glen, McClure, and Schieb.

## **Orthopedic Surgery (Orth. Surg.)**

Clinical Professors Bowers, Davis, Jones Miller, and Wiley; Associate Professor Blaha (Interim Chairperson); Clinical Associate Professors Stemple and Stoll; Clinical Assistant Professors Kurt and Nelson; Clinical Instructors Alvarez, Gleitzman, O'Malley, Sickles, and Waxman.

## **Otolaryngology (Otolaryn.)**

Professors Lass, and Wetmore (Chairperson); Clinical Professors Bland, Bryant, Haislip, Hall, Hatfield, Lim, Morgan, Sprinkle, and Wilkinson and Mann; Associate Professors Koike; Clinical Associate Professors Cather, Jaquiss, Kamerer, Malone, Mathias, Oliverio, Paine, Seung, Snider, Spencer, Sporck, Tekieli-Koay, Touma, Wallace, and Whitaker; Assistant Professors Kovach and Spirau; Clinical Assistant Professors Azar, Blair, Cappellini, Crigger, Dodd, Holt, Hurley, Link, Livingston, Nichols, Riester, Smith, and Wade; Clinical I Instructors Daristotle, and Raush.

## **Pediatrics (Pedia.)**

Professors Bodensteiner, Einzigg, Kelley, Konot, Mullett, Neal (Chairperson), and Starling; Associate Professors Aronoff, Eckerd, Ferrari, Graeber, Gustafson, McJunkin, Myerberg, Ritchey, Shumway, Tarry, and Zangeneh; Assistant Professors Baker, Banvard-Fox, Blum, Chiang, Chung, Cloonan, Corder, Hummel, Irazuzta, Johnson, Kincaid, Mansmann, Perkins, Polak, Previll, Pyles, Selby, Sikora, Steiner, and Waldeck; Adjunct Associate Professors Ludlow, Simons, and Woodrum; Adjunct Assistant Professors Abbott, Hahon, and Shaver; Research Associate Professor Strasburger; Research Assistant Professor Ritchie; Research Instructor Dye; Instructors Moore, Rhodes, Ruben, and Sutherland; Clinical Professors Giles, Jakubec, and Lewine; Clinical Associate Professors Ayoubi, Burech, Hoylman-Ayoubi, Kumar, Staab, Szego, and Wolf; Clinical Assistant Professors Abella, Iskander, Jayaram, Monoco, Morgan, Nelms, Phillips, Reddy, Rhee, and Verma; Clinical Instructors Ewing, Majumder, Rader, and Uy.

331. *Clinical Clerkship in Pediatrics*. (Third Year.) CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.

370. *Medical Genetics*. II. 2-4 hr. PR: Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as CC MD 370, Gen. 370, Med. 370.)

## **Radiology (Radiol.)**

Professors Castaneda-Zuniga (Chairperson) and Frich; Associate Professors Conn, Douglass, Higgins, Mace, Sinha, Slack, Wald, and Willard; Assistant Professors Cunningham, DiGioacchino, Dillis, Granke, Hurst, Smith and Williams; Instructor Dominic; Clinical Professors Artz, Castro, W. Hayes, Kennard, Leef, Sexton, J. Smith, and Wheatley; Clinical Associate Professors Briley, Cordell, Horton, Reifsteck, Tanguilig, and Wolff; Clinical Assistant Professors Caple, Caruso, Cohen, Duncan, Dwyer, Gogineni, Harmon, T. Hayes, Hogg, Holbert, Leon, McJunkin, Noble, Reddy, Sarino, R. Smith, Sparks, Stupar, Vega, Wershba, Whaley, Wymer, and Yost.

## **Surgery (Surg.)**

Professors Boland, Cochran, Graeber, McDowell, Murray (Chairperson), and Warden; Clinical Professors AbuRahma, Bradford (Emeritus), Chang, Charbonniez, Ghaphery, Gilmore (Emeritus), Glass, Gray, Hershey (Emeritus), Kappel, Kessel, J. Khan, M. Khan, King, Kusminsky, Lawton, Leadbetter, Lim, Linger (emeritur), Mantz, McConnell, Mendoza, Surmonte (Chief), Trammel, Trenton (Emeritus), Voss, and Walker; Associate Professors Covey, Gustafson, Hill, Hochberg, McDannald, Quinlan (Adjunct), Rector, Riggs, Schiebel, Sohrabi, and Timberlake; Clinical Associate Professors Bonitatibus, Boustany, Figueroa, Fogarty, Foster, Griswold, Harrison (Emeritus), Kim, Kite, LaPlante, Lee, Mahan, Markey, Polack, Rahbar, Sampath, Seidler, Shackelford, Suson, Tiley, Velasquez, and Williamson; Assistant Professors Blum, Cruzzavala, Granke, Omert, Prescott, Ramsey, Rose, Sikora, and Vaughan; Clinical Assistant professors Al-Hajj, Barcinas, Burke, Burkeland, Cafoncelli, Capito, Carrier, Cross, Curtis,

Fagundo, Fedder, Fischer, Franco, Grant, Hamrick, Heiskell, Johnson, Kalla, Khoury, McLellan, Mossallati, Porcaro, Rao, Rashid, Tolliver, Vaghei, Veatch, Villarreal, Walmsley, and Wright; Instructors Larkin, and Whiteman; Clinical Instructors Cowan, Edwards, Kelly, Lucente, Payne, Ranavaya, Ruben, Staggers, and Strauch.

341. *Clinical Clerkship in Surgery*. (Third Year.) CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of housestaff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.

### **Urology (Urol.)**

Professors Kandzari, and Lamm (Chairperson); Associate Professor McDonald and Tarry; Clinical Professors McCuskey, and Summers; Clinical Associate Professors Durig, Lindert, Shanmugham, and Trapp; Clinical Assistant Professors Beneke, Celis, Hodge, Kassiss, McKinney, Morabito, Naranjo, Plymale, Rach, Serrato, Shannon, Sullesta, Stoughton and Tierney; Clinical Instructor Taubenber

## **Medical Technology Program**

Jean D. Holter, Ed.D., MT(ASCP), Professor and Director

### **Degrees Offered**

B.S., M.S. in Medical Technology

### **Introduction**

The WVU School of Medicine admitted the first medical technology students in the 1945-1946 academic year. In 1987 the program started a career ladder mechanism with Allegany Community College and Fairmont State College, a part-time curriculum and a refresher curriculum.

The primary aim of the undergraduate medical technology program is to provide a strong educational background in the clinical laboratory sciences.

The purposes are: (1) to provide a program that meets the academic standards of the University; (2) to provide medical technologists for hospitals, public health, and research laboratories; (3) to prepare medical technologists for teaching and supervisory positions; and (4) to provide an educational background accepted for graduate work.

The primary purpose of the graduate program in medical technology is to prepare students as supervisors of hospital clinical laboratories, to teach a specific laboratory area, and to direct a medical technology program.

Ruby Memorial Hospital is the primary teaching University Hospital for the School of Medical Technology. Students may be required to fulfill part of their clinical rotations at extramural sites in West Virginia.

The medical technology program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association. The present accreditation, for five years, will be reviewed in 1995.

## Admission Requirements

### Premedical Technology:

Admission requirements for the first year (premedical technology) are the same as those for the College of Arts and Sciences.

### Medical Technology Program:

Admission to the medical technology program includes course requirements, grade-point average, a personal interview, letters of recommendation, and the Allied Health Professions Admissions Test (AHPAT).

The course requirements (prerequisites) are:

English: six hours of composition and rhetoric (Engl. 1 and 2)

Biology: eight hours of general biology (Biol. 1, 2, 3 and 4)

Chemistry: twelve hours including eight hours of inorganic chemistry (Chem. 15 and 16) and four hours of organic chemistry (Chem. 131)\*

Physics: eight hours of general physics (Phys. 1 and 2)

Mathematics: six hours to include minimal requirements of college algebra and trigonometry (Math. 3 and 4)

Liberal Studies Program: 21-24 hours of electives (twelve hours each of Cluster A and Cluster B)

\*Transfer students must complete an organic chemistry course(s) (eight hours) that includes aliphatic and aromatic compounds. The course must include a laboratory.

Applicants should have a minimum grade-point average of 2.5 (cumulative and science). Applicants may be admitted on probation if their grade-point average (cumulative or science) is less than 2.5. Applicants with less than a 2.0 grade-point average, either cumulative or science, will not be admitted. A grade-point average of 2.5 or above does not necessarily assure admission.

A personal interview with the Medical Technology Admission Committee is required.

Two letters of recommendation from instructors in physics, chemistry or biology are required.

Admission of international students is in compliance with West Virginia University regulations. At least one science course (chemistry, physics, or biology) must be completed at an institution of higher education in the United States.

## Application Procedure

Application forms for admission to the professional program are available after December 1 from the Office of the Assistant Director of Admissions and Records, West Virginia University Health Sciences Center, Morgantown, WV 26506. There is an application fee of \$10.00. The priority date for returning the application form is January 15. The deadline date is February 1 if the student expects to enter the program the next fall semester.

Students at West Virginia University or Potomac State College are not transferred automatically from the preprofessional course to the professional course. Students are selectively admitted to the program.

## Graduation Requirements/Junior Year

A student must maintain a grade-point average of 2.0 for each semester to be advanced to the senior year. Any student having one F or more than two D's at the end of the junior year will be suspended from the program. The Junior Year Academic and Professional Standards Committee must recommend any student for advancement to the senior year. A satisfactory grade-point average does not assure advancement.

## Senior Year

A student must maintain a grade-point average of 2.0 for each semester of the senior year. Graduation requires satisfactory completion of all academic work. Graduation requires the recommendation of the faculty of the School of Medicine.

## Curriculum Plan

### PREMEDICAL TECHNOLOGY

#### First Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Chem. 15 <i>Inorganic</i>	4	Chem. 16 <i>Inorganic</i>	4
Elective*	3	Engl. 1 <i>Comp. &amp; Rhet.</i>	3
Math. 3 <i>Algebra</i>	3	Biol. 2	4
Biol. 1	4	Math. 4 <i>Trigonometry</i>	3
M. Tec. 1** <i>Orientation</i>	2		
	<u>16</u>		<u>14</u>

#### Second Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Electives	9	Chem. 131 <i>Organic</i>	4
Phys. 1	4	Electives*	6-9
Engl. 2 <i>Comp. &amp; Rhet.</i>	3	Phys. 2	4
	<u>16</u>		<u>14-17</u>

\*Electives from Cluster A and Cluster B are to be selected to meet the Liberal Studies Program requirements.

\*\*M. Tec. 1 is not required subject but is highly recommended to all students. M. Tec. 1 is offered each semester.

### MEDICAL TECHNOLOGY

#### Third Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
M. Tec. 100	4	Parasitol. 224	4
M. Tec. 202	2	M. Bio. 223	5
Bioch. 139	5	M. Tec. 101	4
Physi. 241	4	M. Tec. 210	1
Elective	3	M. Tec. 291	2
M. Tec. 229	1		
	<u>18</u>		<u>17</u>

#### Fourth Year

Students receive didactic and clinical instruction in the University Hospitals, Inc. laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. If the student has excessive absences during the senior year, competencies not completed must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	No Credit
M. Tec. 200 <i>Orientation</i>	
M. Tec. 220 <i>Immunohematology and Blood Banking</i>	2
M. Tec. 221 <i>Immunohematology and Blood Banking Laboratory</i>	5
M. Tec. 230 <i>Clinical Chemistry</i>	2
M. Tec. 231 <i>Clinical Chemistry Laboratory</i>	5
M. Tec. 240 <i>Clinical Hematology</i>	2
M. Tec. 241 <i>Clinical Hematology Laboratory</i>	5
M. Tec. 250 <i>Clinical Microbiology</i>	2
M. Tec. 251 <i>Clinical Microbiology Laboratory</i>	5
M. Tec. 260 <i>Instrumentation</i>	2
M. Tec. 265 <i>Laboratory Management</i>	2
M. Tec. 270 <i>Clinical Microscopy</i>	1
M. Tec. 271 <i>Clinical Microscopy Laboratory</i>	1
M. Tec. 275 <i>Medical Relevance of Laboratory Analysis</i>	1
M. Tec. 280 <i>Clinical Immunology</i>	3
<i>Total</i>	<u>38</u>

## **Medical Technology (M. Tec.) Undergraduate Courses**

Professor Holter; Associate Professors Gutman and Henderson; Assistant Professors Juriga and Long; Instructor Blehschmidt; Adjunct Assistant Professors Compton and Mull; and Adjunct Instructors August, Brammer, Browning, Miller, and Nutter.

1. *Orientation to Medical Technology*. I, II. 2 hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Pass-Fail grading only.)
100. *Medical Technology*. 4 hr. PR: Acceptance into the Medical Technology Program as a first-year student or consent by Director. Clinical laboratory procedures employed in patient diagnosis in the areas of blood coagulation, blood banking, hematology, and clinical microscopy.
101. *Medical Technology*. II. 4 hr. Continuation of M. Tec. 100.
200. *Orientation*. I, II, S. No credit. (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics. (Pass-Fail grading only.)
202. *Laboratory Math, Quality Control, Computers*. II. 2 hr. Lectures and practice sessions in laboratory mathematics, techniques, and calculations in quality control and an introduction to computers to include terminology and basic operation.
210. *Clinical Laboratory Mycology*. II. 1 hr. How to isolate and identify the more commonly encountered pathogenic fungi as well as those fungi frequently seen as laboratory contaminants. The course will include basic taxonomy, isolation procedures, and identifying characteristics.
220. *Immunohematology and Blood Banking*. I, II. 2 hr. Lectures on immunohematology and blood banking theory and practice.
221. *Immunohematology and Blood Banking Laboratory*. Arranged. 5 hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.
229. *Basic Clinical Chemistry*. II. 1 hr. PR: Students in Medical Technology Program. Basic clinical chemistry procedures and theory. 1 hr. lec.
230. *Clinical Chemistry*. I, II. 2 hr. Lectures on principles of clinical chemistry procedures; their clinical significance and implication in diagnosis.
231. *Clinical Chemistry Laboratory*. Arranged. 5 hr. Practice in the clinical chemistry laboratory.
240. *Clinical Hematology*. I, II. 2 hr. Lectures in hematologic theory and practice.
241. *Clinical Hematology Laboratory*. Arranged. 5 hr. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation and problem solving.
250. *Clinical Microbiology*. I, II. 2 hr. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.
251. *Clinical Microbiology Laboratory*. Arranged. 5 hr. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology and parasitology.

260. *Instrumentation*. I, II, S. 2 hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and trouble shooting.
265. *Laboratory Management*. I, II. 2 hr. Laboratory organization, economics, ethics, and records.
270. *Clinical Microscopy*. I, II, S. 1 hr. PR: Senior standing in Medical Technology or consent. Lecture to cover the screening of body fluids (urine, gastric juices, etc.) for abnormalities and pregnancy testing.
271. *Clinical Microscopy Laboratory*. I, II, S. 1 hr. PR: Senior standing in Medical pregnancy tests, and other procedures.
275. *Medical Relevance of Laboratory Analysis*. 1 hr. PR: Senior status in Medical Technology. Case presentations of pathologic entities encountered in the clinical laboratory. (Pass/Fail grading.)
280. *Clinical Immunology*. I, II, S. 3 hr. Lectures and laboratory practice in the principles of clinical immunology and their relationship to clinical laboratory technology.
291. *Research, Educational Methodology*. II. 2 hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

## **M.S. in Medical Technology Graduate Program**

### **Admission**

Applicants must have a baccalaureate degree in medical technology or an allied health field from an accredited college or university, and must be a certified medical technologist with an acceptable certifying agency.

The area of concentration desired by the student is considered in the undergraduate record evaluation as follows:

Individuals who desire to do special study in clinical chemistry, hematology or immunohematology must have completed a minimum of eight hours in physics, three hours in mathematics, and 12 hours in chemistry to include organic chemistry. Individuals who desire to do special study in microbiology must have completed a minimum of 12 hours of chemistry including organic chemistry and 16 hours in the biological sciences.

A minimum of one year's experience in a clinical laboratory is required. Applicants must have a minimum undergraduate grade-point average of 2.5 (based on a 4 point scale). Results of the aptitude portion of the Graduate Record Examination must be presented. Two professional letters of recommendation are required.

### **Application Procedure**

A preliminary application is filed in the Medical Technology Program Office, along with two reference letters and the results of the aptitude portion of the Graduate Record Examination. These three items are reviewed, and if all prerequisites are met, the applicant must make formal application to West Virginia University. Once the formal application and grade transcript(s) are received, the file is reviewed by the Admission Committee. A personal interview is required before final admission to the program.

### **Graduation Requirements**

1. Satisfactory completion of all course work with a 3.0 GPA.

2. A problem study in the major/minor area.
3. Successful completion of a written comprehensive examination in major and minor interest areas.
4. Successful completion of an oral defense of the problem study. Master of Science Degree in Medical Technology.

It is expected that the students who enter the graduate program in Medical Technology at West Virginia University will have a goal in mind and will have a special field of interest in medical technology. The course of study the student follows is tailored to the needs of the student as far as it is possible to do so. A minimum of 36 semester hours of credit, including a problem study, is required for the master of science degree in medical technology.

The student selects:

1. A major area of concentration from education, supervision, or administration.
2. A minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 15 semester hours of work from the following courses is selected, dependent upon the major area of concentration.

**Required:**

Educational Psychology 320 *Introduction to Research* .....3 hours

Methods and techniques of research in education. Major emphasis on design, analysis, interpretations, and reporting of research

If the major area is education, the following courses are available:

Health Education 320 *Roles and Functions of Health Education* .....3 hours

Education Administration 320 *Personnel Administration* .....3 hours

Education Administration 351 *Administrative Procedures in Adult*

*Education* .....3 hours

Education Administration 462 *Higher Education Law* .....3 hours

Education Administration 463 *Higher Education Finance* .....3 hours

Education Foundations 320 *Philosophic Systems and Education* .....3 hours

If the major area is supervision and/or administration, the following courses are available:

Education Administration 320 *Personnel Administration* .....3 hours

Education Administration 462 *Higher Education Law* .....3 hours

Education Administration 463 *Higher Education Finance* .....3 hours

Public Administration 341 *Administrative Organization and*

*Management* .....3 hours

Public Administration 344 *Public Personnel Administration* .....3 hours

Public Administration 345 *Public Administration and*

*Policy Development* .....3 hours

Courses available for either major for additional credit are:

Educational Psychology 231 *Sampling Methods* .....3 hours

Educational Psychology 260 *Media and Microcomputers in Instruction* .....3 hours

Educational Psychology 301 *Introductory Behavior Analysis* .....3 hours

Educational Psychology 321 *Design of Experiments* .....3 hours

Educational Psychology 343 *Statistical Analysis in Education* .....3 hours

Educational Psychology 364 *Precision Teaching* .....3 hours

Educational Psychology 370 *Programmatic Research* .....3 hours

Health Education 308 *Community Health: Death Education* .....3 hours

Health Education 309 *Community Health: Drug Education* .....3 hours

Students may select courses in schools and colleges at West Virginia University other than the School of Medicine. Courses in management, economics, and education are available, as well as courses in the scientific disciplines of medical technology.

A course in statistical methods is strongly recommended. This may be Educational Psychology 311, Statistics 311, or Community Medicine 311.

All students must complete a minimum of 18 semester hours in a science related to medical technology including M. Tec. 300 *Seminar* (three hours) and M. Tec. 497 *Problem Study* (six hours).

All full-time students register for one hour each semester in Medical Technology 300. Seminars include laboratory management, education in medical technology, and timely topics. A minimum of three hours of seminars to include all three of the above topics is required.

All students are required to pursue study on a problem in their areas of concentration. This study is reported in a thesis-style manuscript. For this study and report, students register in M. Tec. 497.

The total number of hours in M. Tec. 497 is determined by the student's program adviser. As many as nine semester hours in M. Tec. 497 may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only six semester hours in M. Tec. 497 will count toward the fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

At the discretion of the student's program adviser, other requirements in teaching, supervision, and administration may be necessary. The adviser works out with the student a plan of study for the student's entire graduate program. This plan is made at the end of the first semester of the student's graduate study. A copy of this plan of study is filed in the Health Sciences Center Graduate Programs Office. The student's problem study committee is also formed at this time.

### **Graduate Faculty**

Professors Holter, Jagannathan, Rodman, and Thomas; Associate Professor Taylor; Assistant Professors Faynor and Kramer.

### **Course Offerings**

300. *Seminar*. I, II, S. 1 hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of three semester hours to include all three topics is required of all graduate students in the medical technology program.

491. *Advanced Study*. I, II, S. 1-6 hr. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration.

# Physical Therapy Program

S. L. Burkart, PT, Ph.D., Professor and Chairperson.

Degree Offered

B.S. in Physical Therapy

## Nature of Program

The WVU Physical Therapy Program was established in 1970 under the auspices of the School of Medicine to help meet the need for physical therapists in West Virginia. The program is accredited by the Commission on Accreditation in Physical Therapy Education, a specialized accrediting body recognized by the Council on Postsecondary Accreditation. One class is accepted each year for the final two years of a baccalaureate degree program. Students admitted into the program complete six semesters (two are summer sessions) of combined classroom, laboratory and clinical education plus a minimum of 18 weeks of full-time supervised clinical practice in various clinics in West Virginia and other states. A Bachelor of Science degree is awarded to those completing the program, and entitles the graduate to apply for examination for state licensure. A license to practice physical therapy is required by all states.

## Admission Requirements

Recommended high school preparation for physical therapy includes courses in biology, chemistry, algebra, trigonometry, physics, and social sciences. Typing and familiarity with computers are advisable.

Because individualized instruction in laboratories and clinics is an essential component of the program, enrollment must be limited. All students who wish to enter the program must apply for admission and must have completed or be enrolled in the courses listed below. These courses are available at most colleges and usually require two years to complete. Students with degrees in other fields are welcome to apply, but must also complete these courses.

<i>Courses Required for Application</i>	<i>Sem. Hr.</i>	<i>WVU Courses</i>
<b>Pre-Physical Therapy Courses</b>		
Biology (with lab) .....	8	Biol. 1, 2, 3 & 4
Chemistry (with lab) .....	8	Chem. 15 & 16
Physics (with lab) .....	8	Phys. 1 & 2
Introductory Psychology .....	3	Psych. 1
Developmental Psychology (life-span) .....	3	Psych. 141
Introductory Statistics .....	3	Stat. 101
<b>WVU Liberal Studies Requirements</b>		
English Composition .....	6	Engl. 1 & 2
Cluster A courses* .....	12	
(Humanities and Fine Arts; courses in three disciplines, including two courses in one discipline)		
Cluster B courses* .....	6	
(Social and Behavioral Sciences; two courses in two different disciplines, neither of which is psychology)		

\*See Liberal Studies section of the catalog for specific courses acceptable in each Cluster. Three hours in either Cluster A or Cluster B courses must focus substantially on the study of a foreign or minority culture or on women and/or issues of gender.

The courses listed are minimum requirements for application. Other recommended courses are human anatomy and human nutrition. Students are encouraged to pursue studies in additional courses of interest. Students who wish to substitute a course for one of those listed should contact the Division for permission and provide a written description of the proposed substitute.

Applicants must have a minimum GPA of 2.75 in the pre-physical therapy courses with at least a grade of C in each course, and a minimum cumulative GPA of 2.6 in all college courses. All applicants must have completed the Allied Health Professions Admission Test, and submit two letters of recommendation from physical therapists (not relatives) with whom they have worked in clinical settings. A minimum of 80 hours of clinical volunteer or work experience is recommended. It is suggested that this experience be in at least two different settings.

Preference is given to West Virginia residents; non-residents who have attended a West Virginia college or university, or who have other ties to the state, may also be considered.

Applicants who complete any of their pre-requisite courses at a college or university outside of West Virginia must submit a catalog or photocopy of the catalog description for all pre-requisite courses taken.

Application forms are available beginning December 1 from the Office of Admissions and Records, WVU Health Sciences Center, Morgantown, WV 26506. All application materials must be received from the applicant no later than March 1. Qualified applicants are interviewed by the Physical Therapy Admissions Committee. Those considered to demonstrate the greatest potential for success are recommended for admission into the program. A student who does not meet all application requirements but who believes extenuating circumstances justify consideration, may petition the Committee for an interview.

### Graduation Requirements

Students admitted into the program must complete all required courses of each term with a grade of at least C or P in each, and must maintain a minimum GPA of 2.5 each term. Any student who does not meet these requirements may be placed on probation, suspended, or dismissed from the program. The Division of Physical Therapy reserves the right to suspend or dismiss any student who does not perform at an overall level considered satisfactory for patient care.

In the second semester of the junior year, the student will spend one day each week for ten weeks in a clinical setting under the supervision of a physical therapist. During summer session one, after the junior year, the student will be in a clinical rotation eight hours a day for four weeks. In the senior year, the student will be in clinical rotations eight hours a day for three weeks each semester.

After satisfactorily completing all the course work, the student will participate full time for a minimum of 18 weeks in three different clinical settings. Clinical affiliation sites are in West Virginia and other locations.

Students must be prepared to pay for travel, meals and lodging while participating in clinical rotations.

### Curriculum JUNIOR YEAR

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Path. 128	2	Anat. 308	2
Physi. 241	4	Ph.Th. 110	3
Ph.Th. 111	4	Ph.Th. 112	3
Ph.Th. 117	1	Ph.Th. 114	3
Ph.Th. 120	3	Ph.Th. 116	1
		Ph.Th. 118	3
<i>Total</i>	<u>14</u>		<u>15</u>
Summer 1	Hrs.		
Ph.Th. 116	0-3		

## SENIOR YEAR

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Ph.Th. 271	4	Ph.Th. 270	4
Ph.Th. 273	4	Ph.Th. 272	2
Ph.Th. 275	3	Ph.Th. 274	3
Ph.Th. 277	2	Ph.Th. 276 (Not required)	3
Ph.Th. 279	4	Ph.Th. 278	5
Ph.Th. 281	1	Ph.Th. 282	1
<i>Total</i>	<u>18</u>		<u>18</u>

SUMMER I (Senior Year)	Hrs.	SUMMER II (Senior Year)	Hrs.
Ph.Th. 290	0-3	Ph.Th. 290	0-3

### Courses of Instruction in Physical Therapy (Ph. Th.)

Professors Burkart (Chairperson) and Petronis; Adjunct Professor Nelson; Associate Professors Harris and Weaver; Adjunct Associate Professor Erhard; Assistant Professors Pertko and Sorg; Adjunct Assistant Professor Nestor.

Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section of this catalog. Enrollment in Physical Therapy courses is limited to students admitted into the program.

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal system including biomechanics, principles of movement, and analysis of muscle and joint action. Normal and pathological gait.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy. Theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Cardiopulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, and pathology for treatment of cardiopulmonary conditions. Laboratory in cardiopulmonary evaluation, cardiac and pulmonary rehabilitation procedures, and respiratory treatment techniques. Lectures and case presentations in appropriate medical and surgical conditions.
114. *Medicine and Neurology*. II. 3 hr. Lectures in medicine including dermatology, aging, neurology, pharmacology and vascular disorders.
116. *Clinical Education 1*. II. 1 hr. Students perform basic treatment procedures under the supervision of experienced therapists in various clinics. (Graded Pass-Fail only.)
117. *Seminar*. I. 1 hr. Introduction to the profession, current issues, communication, and documentation.
118. *Basic Therapeutic Exercise*. II. 3 hr. Theory and clinical application of evaluation techniques including goniometry and manual muscle testing. The physiological basis and therapeutic application of passive and active forms of exercise are also studied. Emphasis is on progressive resistive and flexibility exercises.
120. *Human Development*. I. 3 hr. Presents human development across the life span with a special emphasis on neuromotor development. Topics include genetics, embryology, infancy, childhood, adolescence, adulthood, aging, and death.
270. *Organization and Management*. II. 4 hr. Basic principles and philosophy of management and the organization with emphasis on interpersonal relationship within an organization, styles of tasks, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.

271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures (including high and low volt stimulation, nerve conduction studies, and the use of electrical stimulation for pain control) is provided.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. Lectures, laboratory practice, and case study presentations are utilized to study the principles and techniques for examining and treating neuromusculo-skeletal disorders involving the extremities. A study of extremity joint mobilization techniques and selected orthopedic pediatric problems is also provided.
274. *Orthopedic Physical Therapy*. II. 3 hr. Continuation of Ph. Th. 273 format and is a continuation of that course. Evaluation and rehabilitation of mechanical disorders of the spine and pelvis are emphasized together with physical therapy and orthopedic management of selected pediatric disorders.
275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in allotted time.
277. *Clinical Teaching*. I. 2 hr. Emphasis on the physical therapist fulfilling numerous teaching roles. Students develop skill and techniques in the facilitation of learning, objective writing, presenting information, A-V utilization, and development of evaluation tools for both clinical and didactic settings.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and fundamental anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education 2*. I. 1 hr. Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include basic testing and evaluation procedures. (Graded Pass-Fail only.)
282. *Clinical Education 3*. II. 1 hr. Supervised experience in more specialized procedures and testing techniques and patient program design. (Graded Pass-Fail only.)
290. *Clinical Education 4*. S. 1-12 hr. Three full-time summer affiliations of six to eight weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health. (Graded Pass-Fail only.)

# School of Nursing

Lorita D. Jenab, Dean

Jacqueline W. Riley, Assistant Dean

Gaynelle McKinney, Chairperson, Senior Unit

Suzanne Gross, Chairperson, Junior Unit

Jacqueline Stemple, Chairperson, Sophomore Unit, Interim Chairperson, Graduate Unit

Mary Jo Butler, Chairperson, Charleston Unit

## Degrees Offered

B.S., M.S. in Nursing

The School of Nursing is planning to offer a doctoral program by mid-decade. The School of Nursing gained national acclaim in the early sixties for the curriculum known as "the West Virginia plan." This integrated curriculum design served as a prototype for many developing schools of nursing. The school celebrated the 30th anniversary of its founding in 1990.

The distinctive mission of West Virginia University School of Nursing is to serve as a center for nursing education, research, and practice. The philosophy, purposes and goals of the school are developed and implemented within the framework of this mission. The goals, which flow from the mission of the school and of the university, guide the development of the undergraduate and graduate programs in nursing.

Class and course requirements are flexible to accommodate the registered nurse who is a full-time worker and a part-time student. Both undergraduate and graduate programs are offered in multiple off-campus sites through the West Virginia Satellite Network (SATNET).

## Accreditation

The National League for Nursing is the recognized accrediting agency for nursing programs. The baccalaureate program received initial accreditation with graduation of the first class in 1964. The master's program was initially accredited in 1981. Both programs have maintained continuing accreditation.

Further information about the undergraduate programs may be obtained by writing Chairperson, Sophomore Academic Unit, WVU School of Nursing, 3002 Health Sciences Center North, Morgantown, WV 26506 for Morgantown, Glenville, and Potomac State College programs; or Chairperson, Charleston Academic Unit, WVU School of Nursing, WVU Health Sciences Center Charleston Division, 3110 MacCorkle Avenue, SE, Charleston, WV 25304, for Charleston, Beckley, and Parkersburg programs. Information about the graduate program is available from the Chairperson, Graduate Academic Unit, WVU School of Nursing, 3014 Health Sciences Center North, Morgantown, WV 26506.

## Undergraduate Program

The baccalaureate program (BSN) accommodates both high school or college students who aspire to a career in nursing and registered nurses (R.N.) who are licensed graduates of associate degree and diploma nursing programs and want to continue their career development.

Basic students may enroll on the Morgantown campus or at Glenville State College in the Glenville State College-West Virginia University School of Nursing consortium program offered in conjunction with the Charleston campus or at Potomac State College for the freshmen and sophomore years. Nursing courses begin in the sophomore year and extend through the senior year.

Registered nurses can complete requirements for a baccalaureate degree in nursing on both the Morgantown and Charleston Health Sciences Center campuses and through extension at Beckley, Potomac State College and Parkersburg. At the extension sites all required non-nursing courses are earned in institutions of higher learning in the respective locations. Credit may be earned by enrollment, College Entrance Examination Board Advanced Placement Program, and Advanced Standing Examination available in the particular institution. Nursing courses are offered at a rate of four to eleven credit hours a semester and are scheduled to provide opportunity for completion of degree requirements in two to three years.

Undergraduate education in nursing prepares graduates to begin professional nursing practice and provides a foundation for graduate education in nursing. Upon completion of the baccalaureate curriculum, the nurse can practice in a variety of settings and with clients of various developmental levels. The graduate uses process skills to maintain, restore, or improve health states of clients, and uses leadership theory to effect change. The baccalaureate graduate uses a conceptual base to evaluate and modify the nursing role in relationship to client needs and expectations, and is prepared to support efforts in expanding nursing knowledge.

### **Fees, Expenses, Housing, Transportation**

Registering students pay the fees shown in the *WVU Health Sciences Center Catalog* charts, plus special fees and deposits as required. Fees are subject to change without notice. Students' expenses vary widely according to the course of study and individual tastes. Students are expected to provide their own equipment and instruments for the clinical courses. Specific immunizations, including hepatitis B, are required.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Health Sciences North, Morgantown, WV 26506, telephone 304/293-3706.

The University Housing and Residence Life Office, G-18 Towers (phone 304/293-3621), provides information concerning University-owned housing. The Student Life Office in Moore Hall (phone 304/293-5611) provides information concerning privately owned, off-campus housing.

Some clinical experiences require the student to travel in a multicounty area. Each student is responsible for providing her/his own transportation.

### **Admission to Basic Program**

Candidates for the basic program in nursing must have completed one year of prescribed courses in an accredited college or university to qualify for admission. The opportunity for direct admission as freshmen is available to selected students with a high school grade point average of 3.4 or higher and an ACT composite score of 22 or better. The prescribed courses are illustrated in the "Suggested Plan of Progression", first year.

Applicants are eligible for review by the Admissions Committee after completion of one full semester of course work. The academic record is the major factor in the decision on admission. To qualify for consideration, a West Virginia resident must have a grade-point average of 2.5 or above, on a scale of 0.0 to 4.0 on all college work attempted. Residents of other states must have an average of 3.2 or above to be considered. West Virginia residents whose grade-point average falls between 2.3 and 2.5 and out of state residents with a grade-point average between 3.0 and 3.2 may petition in writing to the Admissions Committee for special consideration. Such a petition, clearly stating why the applicant should receive special consideration, is

submitted with the application. Admission is competitive and preference is given to West Virginia residents.

Application to the basic program must be made by February 15 of the year the candidate wishes to be admitted. Application forms are distributed after December 1 by the Health Sciences Center Office of Admissions and Records. Completed applications and the required \$10.00 application fee, payable to West Virginia University, may be presented in person or mailed directly to the Assistant Director of Admissions and Records, WVU Health Sciences Center North, Morgantown, WV 26506. February 15 is the deadline for receipt of all application materials, including transcripts.

Application to the Glenville State College— West Virginia University School of Nursing consortium basic program follows the schedule described above. Application forms are available from the WVU Health Sciences Center Office of Admissions and Records, the Charleston Division of WVU Health Sciences Center, and Glenville State College. Completed applications for the consortium program and the required \$10.00 application fee, payable to West Virginia University, are mailed directly to the Student Affairs Coordinator, Charleston Division, WVU Health Sciences Center, 3110 MacCorkle Avenue, SE, Charleston, WV 25304.

### **Admission as a Transfer Student**

An applicant with nursing credit from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. Application should be initiated three months prior to the beginning of the semester in which the applicant wishes to begin nursing courses. Transcripts and other required materials must be received no later than two months before the start of the entering semester. Candidates apply to the Assistant Director of Admissions and Records, WVU Health Sciences Center North, Morgantown, WV 26506, requesting consideration for advanced placement as a transfer student.

### **Admission for Registered Nurses**

Registered nurses are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5 or better on all college work attempted are required to be eligible for consideration. Applicants whose grade-point average falls below 2.5 may petition to the Admissions Committee for special consideration. Registered Nurses who wish to take only selected satellite courses may apply for non-degree seeking status.

Application forms for the Morgantown Campus and the Potomac State College extension site may be obtained from the Assistant Director of Admissions and Records, WVU Health Sciences Center North, Morgantown, WV 26506. Application forms for the Charleston Division, Beckley and Parkersburg extension sites may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Health Sciences Center, 3110 MacCorkle Avenue, SE, Charleston, WV 25304.

### **Academic Standards and Graduation Requirements**

To be in good academic standing, students must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses. A student who is not in good academic standing must present to the advisor an acceptable plan for

meeting these requirements. All such plans must be within the policies and standards set by the Academic Standards and Admissions Committee. The baccalaureate of science in nursing degree is conferred upon completion of 130-133 credit hours.

## **Curriculum**

The curriculum design for both undergraduate and graduate programs is derived from basic beliefs about the major concepts and from beliefs about learning and holism. In essence, a framework is provided to identify the core concepts and their relationships. This framework becomes the student's vehicle or mechanism through which added knowledge can be organized and synthesized, generating new ideas.

The usual curriculum progression for the basic student is presented in the suggested plan of progression.

For the registered nurse student, a minimum of 30 hours of general education courses that meet the University Liberal Studies Program and School of Nursing requirements should be completed before enrollment in the first nursing courses: Nursing 100, Basic Concepts in Professional Nursing; and Nursing 101, Transitional Practicum. It is recommended that the 30 hours be selected from the suggested freshman and sophomore courses listed in the "Suggested Plan of Progression" under the section on curriculum. Special attention should be given to the physical, biological, and psycho-social sciences. Completion of additional general education courses beyond the 30 hours is recommended if the R.N. student wishes to carry a part-time course load. The second semester of chemistry may be waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (Anatomy, Physiology, Microbiology, and Pharmacology).

All R.N. students are required to enroll in Nursing 100 and Nursing 101. The purpose of these courses is to facilitate transition into professional nursing. Special emphasis is placed on socialization into role and expectations of this role according to the School of Nursing's conceptual framework. West Virginia R.N. licensure is required for enrollment in Nursing 101 and subsequent clinical nursing courses.

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours. Graduates of diploma programs establish slow division credit in nursing by successful completion of a comprehensive lower-division challenge examination.

Upon successful completion of Nursing 100 and 101, establishment of lower division nursing credit, and completion of the general education course requirements listed in the suggested plan of progression for the first and second years of the program, the R.N. student is eligible for the Advanced Placement Experience (APE). APE is a conceptual approach to establishing credit for junior nursing courses. Students enroll in specified sections of all Junior level courses and engage in experiences that result in an individualized diagnostic analysis of learning and completion of prescribed learning to meet identified needs. The prescriptive component, usually completed within the semester of enrollment in APE, forms the basis for continued learning in senior courses. Difficulty with APE may require special work or enrollment in additional sophomore or junior courses. Successful completion of APE and of the general education requirements is required to be eligible for matriculation in senior level courses. All senior nursing courses are taken by enrollment. Certification in school health nursing is available to students who meet additional course and experiential requirements.

## Graduate Program

The School of Nursing offers a program of study leading to the Master of Science in Nursing (MSN) degree to prepare the professional nurse for the role of nurse clinician in the advanced practice of nursing in primary health care. The program, which is administered by the Graduate Academic Unit, is offered at the University main campus in Morgantown and at selected extension sites.

This non-traditional, integrated graduate program offers a curriculum which allows students to enroll on a part-time or full-time basis. Throughout the curriculum, students are guided in the processes of self-development aimed at pursuing excellence in scholarly and professional endeavors. The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, master's paper, thesis, and the opportunity to investigate an area of interest in advanced study.

The pattern and duration of the student's study plan is determined in consultation with a faculty advisor and is based upon the student's background and goals. The program can be completed in four semesters of full-time study at the Morgantown campus. The average full-time load is 9-12 credit hours per semester.

Graduate education in nursing prepares clinicians capable of leadership in developing and expanding nursing knowledge, skills, and practice competencies in light of societal needs. Preparation at the master's level provides the opportunity for the student to demonstrate self-direction and effective interactions with other health professionals in improving nursing practice and the health care delivery system. The master's graduate is able to provide quality health care in a variety of settings while clarifying and redefining nursing roles.

## Admission Requirements

Candidates for the master's program in nursing must meet the admission requirements for graduate education at West Virginia University and be graduates of a National League for Nursing (NLN) accredited baccalaureate program in nursing. Applicants with a baccalaureate degree from nursing programs without NLN accreditation are required to take the NLN Comprehensive Achievement Test for Baccalaureate Nursing Students, Form 3113. These students are considered on an individual basis.

Applicants must have completed an introductory course in statistics (three credit hours) and present evidence of a current professional nursing license in at least one state. An interview with a Graduate Academic Unit faculty member and recommendations from the head of undergraduate nursing program, employer, and a colleague are also required. A statement of personal philosophy of nursing and professional goals must accompany the application.

The purpose of the interview is to verify application materials, review admission criteria, identify deficiencies and transferrable credits, and, where possible, project a tentative plan of study. It is expected that the applicant will take an active role in the interview process to be informed about the basis of the admission criteria.

The application process must be completed by January 1 for summer enrollment, March 1 for fall enrollment, and August 1 for spring enrollment. Class sizes are limited based on available faculty resources and space.

Applicants need to complete the following steps in order to be considered for admission:

1. Complete two application forms as indicated and return to the appropriate offices to avoid unnecessary delay in the review process.

a. Application for Admission to Graduate Studies (available from Admissions and Records)—To be returned with a \$25.00 nonrefundable service fee to: Office of Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.

b. Application for Admission to the Master of Science in Nursing Program (available from Graduate Unit office)—To be returned to: Chairperson, Graduate Academic Unit, WVU School of Nursing, Morgantown, WV 26506.

2. Request an official transcript of records from each college or university attended. Transcripts and records should be sent directly to the WVU Office of Admissions and Records.

3. Send the three recommendations directly to the Chairperson of the School of Nursing Graduate Academic Unit.

4. Participate in an interview with a faculty member teaching in the graduate program.

The parameters used for review of applicants include: academic achievement, professional experience, career goals, and recommendations. Once admitted the student is assigned a faculty advisor who guides the student in curricular and academic matters. Enrollment in nursing courses is based on readiness and availability of space.

## Graduation Requirements

The Master of Science in Nursing degree is awarded upon completion of 42 semester credit hours, including 30 hours (master's paper option) to 33 hours (thesis option) in nursing and nine hours of non-nursing electives. The required non-nursing electives are restricted to three hours in computer utilization and six hours of humanities and/or social sciences. Students opting for a master's paper must complete an additional three hours of electives by advisement. Students must complete a thesis (six hours) or a master's paper (three hours).

Achievement of an overall academic average of at least a B in all work completed in the master's program is required. A grade of C in two nursing courses will require a faculty review of the student's program progression. Credit hours for courses in which the grade is lower than a C will not count toward satisfying graduate degree requirements. Nursing courses must be taken for a letter grade; electives may be taken on a satisfactory/unsatisfactory (S/U) basis. Removal of all conditions, deficiencies, and incomplete grades must be accomplished prior to graduation.

## Curriculum Outline

Nursing Theory, Practice, and Research (30-33 hours) Hr.

Nsg. 300 <i>Advanced Nursing: Primary Health Care 1</i> .....	3
Nsg. 301 <i>Advanced Nursing: Primary Health Care 2</i> .....	3
Nsg. 302 <i>Advanced Nursing: Primary Health Care 3</i> .....	3
Nsg. 310 <i>Advanced Nursing Practice 1</i> .....	3
Nsg. 311 <i>Advanced Nursing Practice 2</i> .....	3
Nsg. 312 <i>Advanced Nursing Practice 3</i> .....	3
Nsg. 370 <i>Theories in Nursing</i> .....	3
Nsg. 373 <i>Research Process and Methods in Nursing</i> .....	3
Nsg. 400 <i>Advanced Nursing Practice 4</i> .....	3
Nsg. 497 <i>Research (Master's Paper)</i> .....	3
OR Nsg. 497 <i>Research (Thesis)</i> .....	6

**Total 30-33**

Electives (9-12 hours)	
Master's paper option:	
Electives (non-nursing) .....	9
Electives by Advisement .....	3
Thesis option:	
Electives (non-nursing) .....	9
<i>Total 42</i>	

**The Philosophy of School of Nursing**

"Nursing is an art and a science practiced by professionals in concert with individuals, families and communities for the purpose of promoting health. Nursing is a learned discipline whose perspective is the person-environment health process. The person is inseparable from the environment and interacts dynamically with the environment as a unified whole, thus maintaining integrity. This interaction enables the pursuit of choices and goals. Health is a process through which individuals, families, and communities maximize potential for living a self-determined life.

"Health is promoted through the caring presence of the nurse in situations where capabilities are discovered, strengths are maximized, and development is nurtured. The caring presence is a relationship in which the nurse interacts with persons in the creative application of the discipline's art and science. Nurses collaborate with others to maximize resources for the benefit of the person.

"The discipline of nursing is taught in an academic setting in which students must be educated to practice in a rapidly changing society. The knowledge base for nursing builds on content from the humanities and the sciences. Learning is a life long process which is enhanced in a climate of personal acceptance of the learner as an integrated being. Faculty and students share the responsibility for creating an atmosphere that fosters the development of intellectual curiosity, systematic inquiry, critical thinking, self direction, caring relationships, and a commitment to continued learning.

"Nursing is accountable to society for ensuring that the public interest is protected and served. To promote the relevance of the discipline to societal needs, faculty contribute to the development and evaluation of the discipline by engaging in creative endeavors that reflect a synthesis of teaching, practice, and research.

"Undergraduate education in nursing prepares individuals capable of beginning professional nursing practice and provides a foundation for graduate education in nursing. Graduate education in nursing at the masters level prepares persons to engage in advanced nursing practice and provides a foundation for doctoral study in nursing."

**B.S.N. Suggested Plan of Progression**

**First Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Chem. 11	4	Chem. 12	4
Psych. 1	3	Engl. 1	3
Soc. & A. 1	3	Biol. 2	4
HN&F 71	3	Psych. 141	3
Cluster A or Math. 3	3	Cluster A or Math. 3	3
<i>Total</i>	<i>16</i>	<i>Total</i>	<i>17</i>

## Second Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Nsg. 80	4	Nsg. 75	2
Nsg. 81	3	Nsg. 82	4
Anat. 101	4	Nsg. 83	3
M. Bio. 26	4	Phys. 141	4
Engl. 2	<u>3</u>	Pcol. 160	<u>3</u>
<i>Total</i>	18	<i>Total</i>	16
Nsg. 100 (R.N.'s only)	4		
Nsg. 101 (R.N.'s only)	2		

## Summer between Second and Third Years

Nsg. 180	3
Nsg. 181	3
(Basic Students Only)	6

## Third Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Nsg. 182	4	Nsg. 184	4
Nsg. 183	5	Nsg. 185	5
Nsg. 175 or Stat. 101	2-3	Nsg. 75 or Stat. 101	2-3
Cluster A/elective	<u>3-6</u>	Cluster A/elective	<u>3-6</u>
<i>Total</i>	14-18	<i>Total</i>	14-18

Advanced placement experience for junior level nursing courses  
available for the R.N.s.....20 credit hours

## Fourth Year\*

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
Nsg. 270	2	Nsg. 275	2
Nsg. 284	3	Nsg. 282	2
Nsg. 280	3	Nsg. 283	3
Nsg. 281	2	Nsg. 285	4
Nsg. 286	<u>4</u>	Cluster A/electives	<u>3-6</u>
<i>Total</i>	17	<i>Total</i>	14-17

\*The sequence of courses may vary from campus to campus.

## Courses of Instruction in Nursing (Nsg.)

### (For Nursing Majors Only)

75. *Issues of Nursing*. II. 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.
80. *Concepts of Nursing 1*. I. 4 hr. PR: Sophomore standing or consent. Conc.: Nsg. 81. Introduces concepts, principles, and theories of nursing practice in relation to health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum 1*. I. 3 hr. PR: Sophomore standing or consent. Conc.: Nsg. 80. Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families. (*Graded as Pass-Fail.*)
82. *Concepts of Nursing 2*. II. 4 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 83. Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.

83. *Practicum 2. II. 3 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 82. Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families. (Graded as Pass-Fail.)*
100. *Basic Concepts of Professional Nursing. I. 4 hr. PR: West Virginia R.N. licensure or consent. Concepts and principles related to the professional nurse role. Focuses on the nurse role and role transition plus concepts in the School of Nursing curriculum.*
101. *Transitional Practicum. I. 2 hr. Conc.: Nsg. 100. Selected clinical experiences designed to help students identify strengths and remedy weaknesses in applying professional nursing concepts to client care. (Graded as Pass- Fail.)*
175. *Issues of Nursing 2. I, II. 2 hr. PR: Nsg. 75 or consent. Issues of nursing practice. Emphasizes related theories and research.*
180. *Concepts of Nursing 3. S. 3 hr. PR: Junior standing or consent. Conc.: Nsg. 181. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and moderate deviations from wellness. Builds on past intellectual and interpersonal arts and psychomotor skills.*
181. *Practicum 3. S. 3 hr. PR: Junior standing or consent. Conc.: Nsg. 180. Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and moderate deviations from wellness. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor skills. (Graded as Pass-Fail.)*
182. *Concepts of Nursing 4. I. 4 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 183. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness.*
183. *Practicum 4. I. 5 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 182. Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. (Graded as Pass-Fail.)*
184. *Concepts of Nursing 5. II. 4 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 185. Continuation of concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages*
185. *Practicum 5. II. 5 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 184. Selected experiences for application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. Emphasizes nursing care problems of increased complexity. (Graded as Pass- Fail.)*
270. *Introduction to Research. 2 hr. PR: Senior standing or consent, Stat. 101 or equivalent. Theory, principles, and concepts of the research process with application to nursing practice. 2 hr. lec.*
275. *Issues of Nursing 3. 2 hr. PR: Senior standing or consent. Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.*
280. *Concepts of Nursing 6. I, II. 3 hr. PR: Senior standing or consent. Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.*

281. *Practicum 6. I, II. 2 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 280. Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills. (Graded as Pass-Fail.)*
282. *Concepts of Nursing 7. I, II. 2 hr. PR: Senior standing or consent. Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.*
283. *Practicum 7. I, II. 3 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 282. Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population. (Graded as Pass-Fail.)*
284. *Concepts of Nursing 8. I. 3 hr. PR: Senior standing or consent. Analysis and synthesis of nursing role. Emphasizes theories of leadership and change, and environmental factors affecting health care delivery.*
285. *Practicum 8. I, II. 4 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 284. Selected experiences in the practice of professional nursing in primary and secondary settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (Graded as Pass- Fail.)*
286. *Practicum 9. I, II. 4 hr. PR: Senior standing or consent. PR or Conc.: Nsg. 284. Selected experiences in the practice of professional nursing in acute or critical-care settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (Graded as Pass- Fail.)*
300. *Advanced Nursing: Primary Health Care 1. I. 3 hr. PR or Conc.: Nsg. 370. Analysis and synthesis of concepts in nursing and related sciences relevant to the development of a conceptual framework for nursing of the individual system in primary health care.*
301. *Advanced Nursing: Primary Health Care 2. II, 3 hr. PR: Nsg. 310. Development of a conceptual model for nursing with emphasis on developing strategies to promote client health with the family system.*
302. *Advanced Nursing: Primary Health Care 3. S. 3 hr. PR: Nsg. 311 or Conc.: Nsg. 373. Further development and/or refinement of a conceptual model for nursing with specific emphasis on planned change strategies and how these strategies impact health in the community system.*
310. *Advanced Nursing Practice 1. I. 3 hr. Conc.: Nsg. 300. Advanced nursing practice focusing on applicability of concepts in students' developing conceptual framework with the individual system.*
311. *Advanced Nursing Practice 2. II. 3 hr. Conc.: Nsg. 301. Advanced nursing practice focusing on development and application of nursing strategies within the context of students' conceptual model with the family system.*
312. *Advanced Nursing Practice 3. S. 3 hr. Conc.: Nsg. 302. Advanced nursing practice focusing on application and testing of students' conceptual model through identification of a health problem and through implementation of a planned change strategy in a community system.*
370. *Theories in Nursing. I. 3 hr. PR: Graduate standing; consent. Introduction to the structure and function of extant theories in nursing as a basis for developing a conceptual framework for nursing.*

373. *Research Process and Methods in Nursing*. II. 3 hr. PR: Nsg. 310, 370. Study of the research process and methods as related to a conceptual model of practice and research in nursing.
400. *Advanced Nursing Practice 4*. I, II. 3 hr. PR: Nursing 312. Synthesis of advanced nurse clinician role in health promotion with critical analysis of issues and trends in professional nursing and health care. Practicum and Seminar.
491. *Advanced Study*. I, II, S. 1-3 hr. PR: Graduate standing; consent. In- depth study of topics related to current issues in primary health care. Study may be independent or through specially scheduled seminars.
497. *Research*. I, II, S. 1-6 hr. PR: Nsg. 373; PR or Conc.: Nsg 312; consent. Refinement and implementation of research proposal to meet requirements for the master's thesis, or completion of the master's paper.

# School of Pharmacy

Sidney A. Rosenbluth, Dean

Carl J. Malanga, Associate Dean

Calvin C. Brister, Assistant Dean of Student Affairs

David Lalka, Assistant Dean of Graduate Affairs

## Degrees Offered

M. S., Ph. D. in Pharmaceutical Sciences

B.S. in Pharmacy

Pharm. D. (approved for implementation)

## Introduction

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It became the College of Pharmacy in 1936 and the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program. The current pharmacy curriculum comprises three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

A primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy. To meet this objective, the curriculum provides the student with the scientific and technical knowledge and communication skills required to practice the profession and inculcates in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies and professional organizations. In addition, the pharmaceutical industry provides various opportunities in promotion, distribution, production, and research. Pharmacists are eligible for commissions in the armed forces and for positions with the U.S. Public Health Service. Pharmacists also may prepare for careers in teaching and research through graduate study.

WVU School of Pharmacy offers M.S. and Ph.D. programs in the Pharmaceutical Sciences. Students may specialize in pharmacy, pharmaceuticals, medicinal chemistry, pharmaceutical chemistry, biopharmaceutics/pharmacokinetics, pharmacology and behavioral and administrative pharmacy.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from the American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education. The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy, whose objective is to promote the interests of pharmaceutical education. All of the AACP member institutions must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be not less than 18 years of age and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy. Interns must be registered with the West Virginia Board of Pharmacy and must be

enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate with forty- eight other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

**Admission**

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this catalog and the WVU Undergraduate Catalog. Students preparing for the study of pharmacy may satisfy the course work requirements for entrance into the School of Pharmacy by majoring in any arts and sciences subject and including in their course selections the following, or their equivalents:

Pre-Pharmacy Requirements	Sem. Hr. Credit	WVU Courses Meeting Requirements
English Composition.....	6	Engl. 1 & 2
College Algebra*.....	3	Math. 3
Trigonometry*.....	3	Math. 4
Principles of Economics.....	6	Econ. 54 & 55
General Biology.....	8	Biol.1,3 & 2,4 or 15 & 17
General Chemistry.....	8	Chem. 15 & 16
Organic Chemistry.....	8	Chem. 133/135 & 134/136
Physics.....	8	Phys. 1 & 2
Electives**.....	18	
Total	68	

\*Pre-calculus (four hr.), or Calculus (four hr.) may be substituted for college algebra and trigonometry.  
\*\*Electives must be designed to satisfy the University Liberal Studies Program requirements. (See "Liberal Studies Program" for a listing of specific courses.) Cluster A—12 hr.; Cluster B—six hr. in addition to Economics 54 and 55.

Because limited openings are available, preference in admissions is given to qualified West Virginians, although outstanding nonresident applicants are considered. Careful consideration is given to those personal qualifications which bear upon the fitness of applicants for the study and practice of the profession of pharmacy.

Applicants should write to the Office of Admissions and Records, WVU Health Sciences Center, Morgantown, WV 26506, for official application forms, which will be made available after January 1 of each year and which should be returned to that office by April 1 preceding the fall term (first semester) in which the student seeks enrollment. Formal applications received after the April 1 deadline will be considered only when vacancies exist. A \$10.00 application fee is required and must accompany the application.

Each applicant who is recommended for acceptance is expected to deposit \$75.00 before his/her name is entered upon the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

Before enrollment in the School of Pharmacy, all students must complete all immunizations and diagnostic procedures required by the University of West Virginia Board of Trustees, West Virginia University, the West Virginia University Health Sciences Center, and/or the School of Pharmacy.

Complete information may be obtained from the Dean of the School of Pharmacy, Morgantown, WV 26506 or from the Office of Admissions and Records, WVU Health Sciences Center, Morgantown, WV 26506.

### **Pharmacy College Admission Test**

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy adviser, the School of Pharmacy, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 555 Academic Court, San Antonio, TX 78204.

### **Personal Interview**

The Committee on Admissions may require a personal interview with an applicant, as it deems appropriate. Interviews are held during February, March, and April at the WVU Health Sciences Center and are arranged, insofar as possible, to suit the convenience of the applicant. The general policy is that only applicants with a cumulative and science grade-point average of 2.5 or above are called for an interview. Applicants with a cumulative or science grade-point average below 2.5 are generally not considered for admission.

### **Recommendations on Academic Performance**

Three faculty recommendations are required, although more may be submitted. At least two of these recommendations must be provided by course instructors in any two of the three pre-pharmacy science areas: biology, chemistry, and physics. The third recommendation may be provided by a course instructor of the student's choice.

### **Admission to Advanced Standing**

If space is available, students from other accredited schools of pharmacy may be admitted, provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 grade-point average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses can not be transferred.

### **Student Status and Advancement**

A student's status is determined by the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy, all grades except W, WU, P, and X are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average while in the professional program. An F grade or failure to attain a 2.0 average in any semester will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance, earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on

Academic Standards for advancement to the third professional year. Any student on probation at the beginning of the second semester of the second professional year or any student who qualifies for probation at the end of that semester shall not be eligible for summer clerkships. Any first-professional-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-professional-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended or dismissed from the School of Pharmacy.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 12 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

### **Special Requirements**

Students in the first professional year are required to obtain an Intern Certificate from the West Virginia Board of Pharmacy. Any hours worked before becoming a Registered Intern will not count toward the 1500 clock hours required by the Board of Pharmacy for licensure in West Virginia. The Intern Certificate must be maintained until completion of the internship.

During the first professional year, students will be informed of their assigned semester for the third professional year's required externship/clerkship program. Location and time of the rotations will be assigned during the first semester of the second year. Opportunity will be provided to state individual preference before assignments are made; however, the School of Pharmacy reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying externship/clerkship assignments. The class will be divided into groups of approximately equal size for the summer, fall, and spring terms.

### **Requirements for Degree**

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy. To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

### **Course Changes:**

A student who wants to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission for such change from the Committee on Academic Standards.

## SCHOOL OF PHARMACY CURRICULUM PLAN

### First Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Bioch. 139 <i>Gen. Biochem.</i>	4	M. Bio. 220 <i>Microbiology</i>	4
Anat. 101 <i>Hum. Anat.</i>	3	Phar. 202 <i>Concepts Pceut. 2</i>	4
Physi. 241 <i>Mech. Body Funct.</i>	4	Phar. 228 <i>Phar. Pract. Leg. Env.</i>	4
Phar. 200 <i>Intro. Pceut. Syst.</i>	3	Phar. 241 <i>Fund. Pathophys.</i>	3
Phar. 201 <i>Concepts Pceut. 1</i>	3	Phar. 270 <i>Fund. Med. Chem. 1</i>	3
Phar. 227 <i>Phar. Soc. Env.</i>	2		
	<u>19</u>		<u>18</u>

### Second Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Pcol. 243 <i>Pharmacology</i>	4	Phar. 205 <i>Pceut. Asp. Phar. Pract.</i>	4
Phar. 203 <i>Concepts Pceut. 3</i>	4	Phar. 230 <i>Prof. Asp. Phar.</i>	3
Phar. 229 <i>Man. Asp. Phar. Pract.</i>	3	Phar. 243 <i>Chem. Immu. Agts.</i>	3
Phar. 245 <i>Pharmacotherapeutics 1</i>	3	Phar. 246 <i>Pharmacotherapeutics 2</i>	3
Phar. 271 <i>Fund. Med. Chem. 2</i>	2	Phar. 260 <i>Princ. Med.</i>	2
Phar. 207 <i>Intro. to Drug Lit.</i>	1	Electives	0-4
Electives	0-3		
	<u>16-19</u>		<u>16-19</u>

### Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250 <i>Amb. Care Clerkship</i>	4	Phar. 250, 251, 252, and 253	
Phar. 251 <i>Med. Team Clerkship</i>	4	(See First Session)	
Phar. 252 <i>Inst. Care Clerkship</i>	4	or Electives	
Phar. 253 <i>Elect. Clerkship</i>	4	or Free Session	
	<u>16</u>		<u>16</u>

or Free Session

<i>Third Session (Second Sem.)</i>	<i>Hr.</i>
Phar. 250, 251, 252, and 253	16
or Electives or Free Session	

Prior to graduation and following completion of the first professional year, each student enrolled in the School of Pharmacy must complete a minimum of 19 credit hours of electives as part of the pharmacy curriculum.

Of the 19 credit hours, a minimum of ten credit hours must be electives offered in the School of Pharmacy. The remaining credit hours may be approved electives offered in other colleges and departments at WVU and include all Honors courses offered at WVU. Elective course lists are posted in the School of Pharmacy and are available from the student's adviser. Under special circumstances (e.g., new courses, preparation for special post-baccalaureate programs, etc.) and only with the adviser's permission, the student may take a course which does not appear on either list of approved electives. Beyond the required 19 credit hours, the student may take any other electives. No course taken prior to admission into the School of Pharmacy may be used nor repeated to meet the elective requirements of the professional curriculum.

A student admitted into the School of Pharmacy with a previously earned baccalaureate degree may petition the Committee on Academic Standards to be relieved of a maximum of nine credit hours of approved elective courses outside the School of Pharmacy. This petition is normally granted if the student is in good

academic standing. The student petitions for this exemption during the preregistration period in the Spring Semester of the first year in pharmacy school with the exemption contingent upon the successful completion of both semesters of the first-year pharmacy curriculum. Once the exemption is granted after the first two semesters in good academic standing, it shall not be revoked except for just cause as deemed necessary by the Dean and/or faculty.

The University pass/fail policy will be followed. Only Pharmacy 289 (first offering up to three hours), approved electives in other colleges and departments at WVU, or additional free electives may be taken on a pass/fail basis. A student with at least a 2.0 grade-point average may elect to take up to a maximum of 4 credit hours each semester on a pass/fail grading basis.

## **Graduate Programs**

### **Pharmaceutical Sciences**

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at producing excellent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

### **Admission Requirements**

Applicants for admission must satisfy the general requirements for admission as graduate students. The applicant must possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences in order to be admitted with regular student status. Applicants not meeting criteria for admission with regular student status will be considered for admission under alternate admission classifications as explained in Part 2 of the *WVU Graduate Catalog*. In addition, Graduate Record Examination (GRE) scores in the verbal, quantitative, and analytical portions of the examinations are required from all students except for applicants in the area of Behavioral and Administrative Pharmacy where test scores on the Graduate Management Admissions Test (GMAT) are acceptable. TOEFL, or similar scores, are required of international students.

### **Academic Standards**

No credits are acceptable toward a graduate degree with a grade lower than a C. A graduate student must have a cumulative grade-point average of at least 3.0 for all graduate courses to qualify for the degrees.

### **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceutical chemistry, pharmaceuticals, biopharmaceutics/pharmacokinetics, and behavioral and administrative pharmacy.

### **Requirements for Ph.D. Degree**

The student's first semester is usually occupied with course work while he or she is under the guidance of the assistant dean for research and graduate studies. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first

semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student, with committee advice, may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S., except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee, and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted to candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy, a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

### **Master of Science (M.S.)**

The same program requirements for the first year of graduate study are required of the M.S. degree student as those described for the Ph.D. student. The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceuticals, and pharmacokinetics.

### **Requirements for M.S. Degree**

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than six hours may be for research and thesis. Upon completion of the course work and research requirements and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

### **Pharmacy (Phar. )**

Professors Brister, Jacknowitz, Lalka, Lim, Ma, C. Malanga, Ponte, Riley, and Rosenbluth; Professors Emeritus Wojcik and O'Connell; Associate Professors Abate, M. Davis, Elliott, Glover, R. Griffith and Wedin; Assistant Professors Castiglia, Gannett, Higa, Madhavan, Makela, Rojanasakul, Sarkar, and P. Stout; Clinical Associate Professor Lowe; Clinical Assistant Professors Bartsch, Braun, Clark, Kelly, Lorenzo, M. Malanga, Midcap, Moherman, Naymick, Ott, Parker, Parks, Prettyman, Ross, Stevenson, and Woodward; Clinical Instructors Alderman, Alderson, Anderson, Atkinson, Bail, Barton, Bay, Bovenizer, Boyd, Brosh, Caplan, Carney, Casdorph, Cole, Coleman, Corkrean, Craddock, Crawford, Criss, Crowe, R. Davis, T. Davis, Denemark, Duarte, Eddy, Foster, Fragale, Frederick, Fruth, Fusco, Gastineau, Gerkin, Gibson, G. Gill, Godwin, J. Griffith, W. Griffith, Griffiths, Gryskevich, Hackett, Hamilton, Hammond, Harrison, Helfrich, Henry, Hess, Heyman, Hickman, Hill, Hockenberry, Holmes, Howard, Hrytynski, Jarvis, Johnston, Jones, Judy, Knoop, Law, Lewis, Logan, Lusk, Manzuk, Marshall, Martin, McGlothlin, McIntire, McKeever,

McNeil, Menighan, Meredith, D. Miller, J. Miller, Morgan, Muha, Nottingham, Olness, Orlando, Ottmar, Ottoway, Patriarca, Paxton, Pedley, Perdue, Pietranton, Plummer, Raymond, Ream, J.Reed, K. Reed, R. Reed, Rexrode, Reynolds, Rider, Ridgway, Ringer, Ritchie, Robinette, Rokisky, Sarles, Scrivo, Sebroski, Shallis, Shaw, Slevin, Small, Smith, Sommer, Spassil, Straight, Stanley, R. Stout, Taylor, B. Thomas, D. Thomas, J. Thomas, N. Thomas, Tonkovich, E. Toompas, S. Toompas, Turner, Van Meter, Valentine, Wallace, Wallander, Watkins, Way, Weaver, Weekley, Wood, Yann, and Ziolkowski; Adjunct Professors Howard, Nematollahi, O'Donnell, and Shah; Adjunct Assistant Professors Khoury, Kirsch, Lacagnin, Noonan, Swisher, and Weinstein; Adjunct Instructors Dalton, Goto, Hix, Kibler, Krahulec, Schamroth, and Stone.

200. *Introduction to Pharmaceutical Systems*. I. 3 hr. PR: First-year standing in pharmacy or consent. Pharmaceutical calculations, dosage forms, dispensing techniques, and an overview of pharmacy practice and career opportunities.
201. *Concepts in Pharmaceutics 1*. I. 3 hr. PR: First-year standing in pharmacy or consent. Concepts of a pharmaceutical systems with emphasis on the physicochemical principles in formulations and dosage forms, primarily solutions and their calculations.
202. *Concepts in Pharmaceutics 2*. II. 4 hr. PR: Phar. 201 or consent. Special dosage forms, quality control, drug analysis, design and manufacture of pharmaceutical formulations and their conformity with Food and Drug Administration (FDA) regulations, especially good manufacturing practices.
203. *Concepts in Pharmaceutics 3*. I. 4 hr. PR: Phar. 202 or consent. Fundamentals of biopharmaceutics/pharmacokinetics are presented. The kinetic, therapeutic, and dosage formulation-related aspects of drug absorption and disposition are discussed. Laboratories emphasize theoretical and practical problems in pharmacokinetics and bioavailability.
205. *Pharmaceutical Aspects of Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature*. II. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.
211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. (Includes lab component.)
212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
213. *Industrial Pharmacy*. I. 3-4 hr. PR: Phar. 202. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experience in manufacturing and development techniques.
214. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.

215. *Physical Pharmacy*. II. 3 hr. PR: Second-year standing in pharmacy or consent. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. PR: Phar. 229 or consent. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I. 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
233. *Current Developments in Pharmacy Practice*. II. 3 hr. PR: Third- professional-year standing, or second-professional-year by consent. Examines issues of current importance to contemporary pharmacy practice such as prepaid health insurance, peer standards review and organizations, degree and title granting, competency based relicensure and continuing education, and technicians' roles.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
243. *Chemotherapeutic and Immunobiologic Agents*. II. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
245. *Pharmacotherapeutics 1*. I. 3 hr. PR: Second-year standing in pharmacy or consent. The application of pharmacodynamic, pharmacokinetic, and pharmaceutical principles in the treatment, diagnosis, and prevention of disease states.
246. *Pharmacotherapeutics 2*. II. 3 hr. PR: Phar. 245 or consent. A continuation of Phar. 245.

247. *Clinical Pharmacokinetics*. 3 hr. PR: Pharm. 203 or consent. The application of pharmacokinetic principles to the therapeutic management of disease states. Includes effects of altered physiological conditions and diseases on drug kinetics and dose individualization techniques for specific drugs. (3 hr. lec.)
249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on medication advising, role of drug therapies in patient care, patient monitoring, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional- year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers (primarily hospitals) with emphasis on the pharmacist's relationship with nstitutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Advanced Pharmacotherapeutics*. I. 3 hr. PR: Phar. 246 or equiv., and consent. The integration of pharmacological-therapeutic concepts in the study of treatment modalities and problems which may be encountered by the pharmacist in drug management of selected disease states.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
270. *Fundamentals of Medicinal Chemistry 1*. II. 3 hr. PR: First-year standing in pharmacy or consent. A relationship of the chemistry, structure, and physico-chemical properties of drugs to their pharmacodynamic effects. Major portion devoted to basic principles followed by discussion in pharmacological classes.
271. *Fundamentals of Medicinal Chemistry 2*. I. 2 hr. PR: Phar. 270. Cont. of 270.
272. *Pharmacochemical Concepts of Drug Design*. II. 3 hr. PR: Phar. 271 or consent. Selected concepts of chemical approaches to the study of pharmacological and toxicological actions of drugs and their application to drug design.
276. *Pharmaceutical Quality Control*. II. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.

280. *Drugs, Nutrients, and Health*. II. 3 hr. The course is intended to provide the student with fundamental concepts and principles of nutrition science.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present.
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies.
285. *Nuclear Pharmacy*. I. 3 hr. PR: Second-year standing in pharmacy or consent. Production and properties of radiation; detection of radiation; nuclear medicine instrumentation; the formulation, production, quality control, and use of radioactive materials and radiopharmaceuticals used in diagnosis and treatment.
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S. 1-3 hr. PR: Consent. Original investigation in pharmaceuticals, medicinal chemistry, pharmacology, pharmacognosy, or pharmacy administration.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
300. *Industrial Pharmacy*. I. 4 hr. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
315. *Physical Pharmacy*. I or II. 3 hr. Designed to illustrate the special application of physico-chemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
370. *The Synthesis of Drugs*. I, II, S. 3 hr. PR: Chem. 332 and consent. A survey of the approaches employed in the synthesis of a variety of examples of pharmacologically useful agents. Emphasis is placed on retrosynthetic analysis of target molecules and the application of synthetic procedures to multi-step syntheses.
390. *Special Topics*. I, II, S. 1-4 hr.

391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. PR: Consent. A multidisciplinary weekly presentation and discussion of special topics and research in the pharmaceutical sciences. (Weekly attendance is required and grading is on an S/U basis only.)
396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 13 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
484. *Special Seminar*. I, II, S. 1-6 hr. For use by disciplines in the pharmaceutical sciences wishing to have graduate students and faculty participate in seminars and group discussions on specialized or technical topics at the advanced level.
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Graduate standing and consent. Supervised practices in college teaching of pharmacy.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Formal presentation by graduate students to assembled graduate faculty and students of research or special topics approved by adviser. Title to be presented at start of semester. Required at least once annually. Grading is S/U.
497. *Research*. I, II. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent.

### **Pharmaceutical Chemistry (Ph. Ch.)**

375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Ph. Ch. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.

### **Pharmaceutics (Pceut.)**

302. *Advanced Pharmaceutics*. I or II. 3 hr. Physicochemical and biopharmaceutical principles involved in disperse systems (liquid, semi- solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.

### **Pharmacy Administration (Phar. Ad.)**

320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.

## **University Health Service**

When you enroll at the University, one of the charges that you pay is the health service fee. This fee allows you to use the primary medical care provided by the University Health Service. The service, located on the first floor of Health Sciences South, includes medical consultation and treatment. To use the service, you must present your current student ID.

If you require more specialized care, the Health Service may refer you to an outpatient clinic at the Health Sciences Center. In this case, you are responsible for registration fees, doctor's fees, x-ray or lab fees, etc. The University Health Service publishes a brochure that details the services included in the health service fee and outlines services that are not provided.

The emergency department is available to you when the University Health Service is closed. However, all costs incurred at the emergency department are your responsibility. Since most insurance policies cover emergency department costs only when a true emergency exists, we advise you to use this service responsibly and maturely. A voluntary insurance plan is available to you to cover inpatient and outpatient services beyond the primary care covered by the health fee. We urge you to purchase this or similar coverage.

## **Library**

The Health Sciences Library has a collection of more than 205,000 volumes and extensive holdings of audio-visual materials. It currently receives more than 2400 journals. The library primarily serves the schools of Dentistry, Medicine, Nursing, and Pharmacy, graduate students in the basic sciences, and the West Virginia University Hospital System. It also supports the biomedical information needs of the University and of health professionals across the state. As West Virginia's Resource Library in the National Library of Medicine's Regional Medical Library network, the Health Sciences Library operates an efficient interlibrary loan service for University staff and students and for West Virginia's hospitals and clinicians. Other services include online searches of data bases available through the National Library of Medicine, Bibliographic Retrieval Services, Chemical Abstracts Service, OCLC, and Wilsonline. Also available are computer facilities permitting students, faculty, and staff to perform their own computer searches. A computerized West Virginia union list of periodicals is maintained, and installation of an integrated library system should soon be under way. The library is open 98 hours a week for most of the year; regular hours and variations are posted at the entrance.

West Virginia University Hospitals Inc. offer the following programs:

### **Radiologic Technology**

A two-year program for radiologic technologists is offered by the Department of Radiology at West Virginia University Hospitals. This course covers anatomy and physiology, radiologic physics and radiation biology, quality assurance, radiographic procedures, pathology, medical terminology, computer literacy, nursing procedures, and professional ethics. Subjects taken do not carry WVU credit, but provision to transfer course work under the Board of Regents Bachelor of Arts program may be pursued. Clinical education is acquired on assigned tours of duty under the tutelage of staff members and clinical instructors. The program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA).

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. All students are required to

take the American College Testing Program (ACT) test and have the report of scores sent to WVU prior to the admission deadline. SAT scores are not accepted.

Students provide their own lodging and meals. Those completing the program are awarded a certificate and are eligible to take the American Registry of Radiologic Technologists Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Education Programs, Department of Radiology, West Virginia University Hospitals, Morgantown, WV 26506. Application deadline is February 1.

### **Dietetic Internship Program**

The Dietetic Internship Program is offered by the Department of Nutrition and Dietetics of West Virginia University Hospitals. The internship is a 44- week generalist program providing learning experience in administrative and clinical dietetics, and is accredited by the American Dietetic Association. Upon successful completion of the program, the intern is recommended for membership in the American Dietetic Association and is eligible to complete the national registration examination.

Admission requirements are: completed bachelor's or advanced degree from an accredited college or university with courses meeting ADA Plan IV or V program requirements in general dietetics and at least a 2.8 overall grade-point average with a 2.25 in science courses and 3.0 in food and nutrition courses. Applications should reach the Internship Director by February 15. Appointments will be made in April for entrance in September.

Appointments to the program will be based on personal goals and expectations as identified in the letter of application, evidence of scholastic performance, work experience, extracurricular activities, scholastic honors received, letters of reference, and telephone interview with the screening committee.

Communications should be addressed to:

Director of Dietetic Internship  
West Virginia University Hospitals  
Department of Nutrition and Dietetics  
Morgantown, WV 26506-8016

### **Health Sciences Center**

John E. Jones, M.D., Vice President for Health Sciences  
James K. Hackett, M.B.A., Associate Vice President for Health Sciences  
William O. McMillan, Jr., M.D., Associate Vice President, Charleston Division  
Robert M. D'Alessandri, M.D., Dean, Medicine  
W. Robert Biddington, D.D.S., Dean, Dentistry  
Lorita D. Jenab, Ed.D., Dean, Nursing  
Sidney A. Rosenbluth, Ph.D., Dean, Pharmacy  
Bernard G. Westfall, M.B.A., President, WVU Hospitals

### **Health Sciences Center Staff**

Evie Brantmayer, Assistant Director, WVU Admissions and Records, Health Sciences Center  
John T. Coughlin, Director of Communications  
Charles D. Ervin, Director of Human Resources  
Harold H. Harper, Special Assistant to the Vice President for Health Sciences  
Virginia Hunt, Vice President for Strategic Planning and Marketing  
Gary B. Miller, Director of Physical Plant  
Robert L. Murphy, Director, HSC Library  
Virginia J. Petersen, Assistant to the Vice President for Health Sciences  
Darlene Taylor, student records clerk and secretary to the Graduate Council

# Administration and Faculty

## President's Cabinet

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Marion F. Dearnley, J.D., Associate Provost for Student Affairs

Edwin Flowers, J.D., Vice President for Institutional Advancement

Frank A. Franz, Ph.D., Provost and Vice President for Academic Affairs and Research

James K. Hackett, M.B.A., Associate Vice President for Finance and Administration,  
Health Sciences

Mary Jane Hitt, Ed.D., Special Assistant to the President

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Herman Mertins, Jr., Ph.D., Vice President for Administration and Finance

Jon A. Reed, J.D., Executive Officer and General Counsel

James Robinson, WVU Foundation President *Ex officio*

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Rachel B. Tompkins, Ed.D., Associate Provost for University Extension and  
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William E. Vehse, Ph.D., Associate Provost for Academic Affairs and Research

Sophie Blaydes, Ph.D., Faculty Representative

Michael Garrison, Student Body President

Marti Shamberger, Staff Council President

## School of Dentistry

Camillo A. Alberico, D.D.S. (Marquette U.), Professor Emeritus of Endodontics.

Lester H. Bakos, D.D.S. (WVU), Associate Professor of Oral and Maxillofacial Surgery.

Arthur J. Beaumont, Jr., D.D.S. (WVU), Associate Professor of Prosthodontics.

Henry J. Bianco, Jr., D.D.S. (U. Md.), Associate Dean; Professor of Prosthodontics.

W. Robert Biddington, D.D.S. (U. Md.), Dean; Professor of Endodontics.

Byron H. Black, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry,  
Charleston Division.

Jerry E. Bouquot, D.D.S. (U. Minn.), Professor and Chairperson of Oral Pathology.

Dale C. Bowers, D.D.S. (Ohio St. U.), Professor of Oral Diagnosis and Radiology.

Kirkland Brace, D.D.S. (Georgetown U.), Clinical Assistant Professor of Hospital Dentistry.

William Buch, D.D.S. (Emory U.), Clinical Assistant Professor of Hospital Dentistry.

Mark Byron, D.D.S. (U. Pitt.), Clinical Instructor of Dental Practice Management.

John L. Campbell, D.D.S. (Ind. U.), Professor Emeritus of Oral and Maxillofacial Surgery.

John A. Capriolo, D.D.S. (U. Md.), Clinical Assistant Professor of Hospital Dentistry.

John Carson, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Minter L. Chapman, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative  
Dentistry.

Wayne G. Christian, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry,  
Charleston Division.

Damon E. Coffman, D.D.S. (WVU), Clinical Assistant Professor in Hospital Dentistry.

Myles I. Cogan, D.D.S. (U. Tex.), Clinical Professor and Chair of Hospital Dentistry.

Robert J. Conner, Jr., D.D.S. (WVU), Professor of Prosthodontics.

H. Lee Courtney, D.D.S. (WVU), Clinical Assistant Professor in Hospital Dentistry.

Richard J. Crout, D.M.D. (U. Pitt.), Professor of Periodontics.

Christina DeBiase, Ed.D. (WVU), Professor of Dental Hygiene.

Ashok Dey, M.A. (NYU), Clinical Assistant Professor of Pediatric Dentistry.

Gene Dickinson, D.D.S. (U. Tenn.), Assistant Professor of Operative Dentistry.

Lindsey R. Douglas, III, D.M.D. (U. Ky.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Paul E. Estep, D.D.S. (WVU), Assistant Professor of Dental Practice Management.

Peter H. Fagan, D.D.S. (Loyola U., Chicago), Clinical Assistant Professor in Hospital Dentistry.

Sanford J. Fenton, D.D.S. (NYU), Professor and Chair of Pediatric Dentistry.

David C. Fogarty, D.D.S. (WVU), Clinical Associate Professor of Oral and Maxillofacial Surgery.

James R. Foor, D.D.S. (WVU), Associate Professor of Operative Dentistry.

John W. Frye, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

Albert Getty, D.D.S. (WVU), Clinical Instructor in Operative Dentistry.

Mohssen Ghalichebaf, D.D.S. (Indiana U.), Associate Professor of Prosthodontics.

Lewis Gilbert, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

Marcia Gladwin, M.S. (U. Ky.), Professor of Dental Hygiene.

Stephen C. Gladwin III, D.D.S. (Ohio St. U.), Professor of Operative Dentistry.

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William L. Graham, D.D.S. (U. Md.), Associate Dean; Professor and Chairperson of Oral Diagnosis and Radiology.

Catherine E. Graves, M.A. (WVU), Professor of Dental Hygiene.

Robert W. Graves, D.D.S. (WVU), Professor and Chairperson of Oral and Maxillofacial Surgery.

James K. Hackett, M.B.A. (Tulane U.), Associate Professor of Dental Practice Administration.

James D. Haddox, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

John B. Haley, Jr., D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

Joseph D. Hancock, D.D.S. (WVU), Clinical Assistant Professor in Hospital Dentistry.

George W. Harper, D.D.S. (WVU), Associate Professor of Prosthodontics.

Richard I. Hart, D.D.S. (U. Mich.), Professor of Operative Dentistry.

David M. Hickman, D.D.S. (WVU), Professor of Dental Practice Management.

Douglas E. Holmes, D.D.S. (U. Iowa), Assistant Professor of Pediatric Dentistry.

Robert H. Hornbrook, D.D.S. (WVU), Associate Professor of Periodontics.

Barbara Ingersoll, Ph.D. (Penn St. U.), Clinical Associate Professor of Community Dentistry.

Kent E. Jackfert, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry, Charleston Division.

C. Russell Jackson, D.D.S. (WVU), Associate Professor of Endodontics.

S. N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Periodontics.

Winifield C. John, III, D.M.D. (U. Ky.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Gordon G. Keyes, D.D.S. (U. Md.), Professor of Oral Pathology.

Darryl R. King, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Wendell C. Kitchen, D.D.S. (Ohio St. U.), Assistant Professor of Orthodontics.

Barbara K. Komives, M.S. (Ohio St. U.), Professor and Chairperson of Dental Hygiene.

Markus K. Koster, D.D.S. (WVU), Clinical Instructor (part-time) in Pediatric Dentistry.

Robert M. Kreig, D.D.S. (WVU), Clinical Instructor of Community Dentistry.

John Kuyk, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

Stephen J. Kwiatkowski, D.D.S. (WVU), Professor of Prosthodontics.

David A. Lattanzi, D.D.S. (Case West. Res. U.), Clinical Associate Professor of Oral and Maxillofacial Surgery.

Claude R. Lee, D.M.D. (U. Ky.), Clinical Instructor in Hospital Dentistry.

Harry L. Legan, D.D.S. (U. Minn.), Professor and Chairperson of Orthodontics.

John Lindsay, D.D.S. (WVU), Clinical Assistant Professor in Oral and Maxillofacial Surgery.

Clifford Linkous, D.D.S. (WVU), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Paul Loflin, D.D.S. (U. Md.), Clinical Professor of Community Dentistry.

Raymond L. McCutcheon, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

William R. McCutcheon, D.D.S. (WVU), Associate Dean; Professor and Chairperson of Community Dentistry.

Nancy M. Mantich, D.D.S. (Indiana U.), Assistant Professor of Oral Diagnosis and Radiology.

William Marshall, D.D.S. (WVU), Assistant Professor of Hospital Dentistry.

Hubert Martin, D.D.S. (U. Md.), Clinical Associate Professor (part-time) of Orthodontics.

Richard L. Meckstroth, D.D.S. (Loma Linda U., Calif.), Professor of Community Dentistry.

H. Darrell Milem, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Periodontics.

Michelle Moreschi, D.D.S. (WVU), Clinical Instructor (part-time) in Endodontics.

Susan Morgan, D.D.S. (WVU), Clinical Assistant Professor of Community Dentistry.

Donald J. Morrison, D.D.S. (U. Iowa), Professor and Chairperson of Periodontics.

Patricia Mullins, B.S. (West Liberty), Adjunct Clinical Instructor in Dental Hygiene.

Robert L. Murphy, M.S. (Cath. U. Am.), Adjunct Associate Professor of Periodontics.

Gary G. Naylor, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

Donald Neil, D.D.S. (U. Detroit), Clinical Professor of Community Dentistry.

Franklin Oliverio, D.D.S. (U. Md.), Clinical Associate Professor (part-time) of Oral and Maxillofacial Surgery.

William M. Oscanyan, D.D.S. (WVU), Associate Professor of Hospital Dentistry, Charleston Division.

James E. Overberger, D.D.S. (U. Pitt), Associate Dean; Professor of Dental Materials.

Raju Paonaskar, D.D.S. (WVU), Assistant Professor of Orthodontics.

Ginger Parsons, D.D.S. (WVU), Clinical Instructor (part-time) in Prosthodontics.

James L. Payne, D.D.S. (U. Mo.), Clinical Instructor in Hospital Dentistry.

Robert G. Pifer, D.D.S. (WVU), Professor of Oral Diagnosis and Radiology.

James B. Poindexter, Jr., D.D.S. (U. Penn), Clinical Professor of Oral and Maxillofacial Surgery.

Shelia S. Price, D.D.S. (WVU), Assistant Professor of Oral Diagnosis and Radiology.

David T. Puderbaugh, D.D.S. (WVU), Professor and Chairperson of Dental Practice Management.

Kathy Raymond, M.S. (WVU), Assistant Professor of Dental Hygiene.

Alexander Roberts, D.D.S. (U. Pitts.), Clinical Assistant Professor of Oral and Maxillofacial Surgery.

Ted Rice, D.D.S. (U. Iowa), Associate Professor of Endodontics.

Vernon Rodeffer, D.D.S. (U. Md.), Associate Professor of Operative Dentistry.

William J. Rosenfeld, D.D.S. (SUNY), Clinical Assistant Professor of Hospital Dentistry.

Jack A. Roth, D.D.S. (U. Md.), Professor of Prosthodontics.

John Ruby, D.M.D. (U. Penn.), Clinical Assistant Professor of Pediatric Dentistry.

W. Dean Russell, D.D.S. (Emory U.), Clinical Associate Professor of Hospital Dentistry.

Robert E. Sausen, D.D.S. (U. Minn.), Professor and Chairperson of Operative Dentistry.

Alex W. Skaff, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

A. E. Skidmore, D.D.S. (WVU), Professor and Chairperson of Endodontics.

Homer W. Smith, D.D.S. (WVU), Professor of Oral Diagnosis and Radiology.

Norton P. Smith, D.D.S. (WVU), Associate Professor of Prosthodontics.

Michael J. Sokolosky, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

Carol Spear, M.S. (U. Mich.), Associate Professor of Dental Hygiene.

Robert J. Steelman, D.M.D. (Wash.U.), Assistant Professor of Pediatric Dentistry.

Frank Stevens, D.D.S. (WVU), Assistant Dean. Associate Professor of Operative Dentistry.

John T. Stevens, D.D.S., Associate Professor of Operative Dentistry.

Charles J. Stewart, D.D.S. (WVU), Associate Professor of Prosthodontics.

Robert Stuchell, D.M.D., (U. Pitt), Associate Professor of Periodontics.

Lawrence E. Syner, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

Daniel R. Taylor, D.D.S. (WVU), Clinical Assistant (part-time) Professor of Endodontics.

Nancy E. Taylor, D.D.S. (WVU), Clinical Assistant Professor of Community Dentistry.

Kay F. Thompson, D.D.S. (U. Pitt), Clinical Professor of Community Dentistry.

James E. Valentine, D.D.S. (WVU), Clinical Associate Professor of Orthodontics.

Alan K. Vance, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Community Dentistry.

John Vargo, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

David H. Walker, D.D.S. (WVU), Professor of Dental Practice Management, Charleston Division.

Robert L. Wanker, D.D.S. (WVU), Clinical Associate Professor (part-time) of Periodontics.

Amelia J. Weber, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Arnold L. Weese, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

John T. Welch, D.D.S. (U. Md.), Professor and Chairperson of Hospital Dentistry.

Stephen G. Wilbourn, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

John B. Wilfong, D.D.S. (Ohio St. U.), Clinical Associate Professor (part-time) of Orthodontics.

Thomas S. Wilkerson, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

John A. Wilson, D.D.S. (Ohio St. U.), Clinical Associate Professor of Community Dentistry.

William M. Wine, D.D.S. (WVU), Clinical Associate Professor of Hospital Dentistry.

Stephen Young, Ph.D. (U. New Mex.), Clinical Associate Professor of Oral Pathology.

## School of Medicine

Henry L. Abrons, M.D. (Case West. Res. U.), Assoc. Professor of Medicine (Pul.Medicine) and Pediatrics.  
Thomas R. Adamski, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.  
Margaret J. Albrink, M.D. (Yale U.), Professor Emeritus of Medicine (Metabolism-Endocrinology).  
Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), Professor Emeritus of Pathology.  
Dona M. Alvarez, M.D. (WVU) Clinical Instructor of Orthopedic Surgery.  
Mary Ann Antonelli, M.D. (SUNY—Upstate Med. Cen.), Asst. Professor of Medicine, Rheumatology.  
James G. Arbogast, M.D. (WVU), Associate Professor of Family Medicine.  
Stephen C. Aronoff, M.D. (U. of Pitt.) Associate Professor of Pediatrics.  
Harold G. Ashcraft, M.D. (WVU), Assistant Professor of Pathology.  
Jeffrey V. Ashley, M.D. (WVU), Assistant Professor of Family Medicine, Charleston Division.  
Miklos Auber, M.D. (Sammelweis Med. U.), Assistant Professor of Medicine  
Albert J. Azzaro, Ph.D. (WVU), Professor of Neurology, Pharmacology and Toxicology, and Behavioral Medicine and Psychiatry.  
Byron D. Bair, M.D. (U. Utah) Instructor of Medicine (Comprehensive Medicine).  
John Chris Baker, M.D. (WVU), Assistant Professor of Pediatrics.  
Marvin R. Balaan, M.D. (U Philippines) Assistant Professor of Medicine (Pulmonary Medicine).  
Daniel E. Banks, M.D. (Wayne State U.), Department Section Chief and Associate Professor of Medicine.  
Christine A. Banvard-Fox, M.D. (WVU) Assistant Professor of Pediatrics and Physician, UHS.  
Mario C. Battigelli, M.D. (U. Florence), Director of the Institute of Occupational Health and Safety and Professor of Community Medicine  
Christine Baylis, Ph.D. (Leeds U., Yorkshire, England), Professor of Physiology.  
Diana S. Beattie, Ph.D. (U. Pitt), Chairperson and Professor of Biochemistry.  
Mark R. Bennett, M.D. (WVU), Assistant Professor of Anesthesiology.  
William A. Beresford, Ph.D. (Oxford U.), Professor of Anatomy.  
Mary J. Berry, M.S.W. (WVU), Instructor in Behavioral Medicine and Psychiatry.  
Christine A. Bezouska, M.D. (SUNY), Assistant Professor of Anesthesiology.  
Veena K. Bhanot, M.D. (Gov. Med. C., India), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
Dale L. Birkle, Ph.D. (U. Mich.), Assistant Professor of Pharmacology and Toxicology.  
J. David Blaha, M.D. (U. Mich.), Associate Professor and Interim Chairperson of Orthopedic Surgery.  
Paul D. Blanton, Ph.D. (U. of Ala-Birm.) Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
Donald M. Blatchley, M.D. (Jeff. Med. C.), Clinical Professor Emeritus of Medicine (Dermatology).  
Nancie A. Blehschmidt, B.S. (WVU), Instructor in Medicine (Metabolism- Endocrinology) and Medical Technology.  
Stephen M. Bloomfield, M.D. (R.W. Johnson Med. Sch.) Assistant Professor of Neurosurgery.  
Frederick C. Blum, M.D. (WVU), Assistant Professor of Surgery (Emergency Room).  
John B. Bodensteiner, M.D. (U. Iowa), Professor of Neurology and Pediatrics.  
Matthew Boegehold, Ph.D. (U. of Ariz.) Assistant Professor of Medicine (Pulmonary Medicine) and Physiology.  
James P. Boland, M.D. (Jeff. Med. C.), Professor, Assistant Chairperson and Chief of Surgery, Charleston Division.  
Mark A. Borsch, M.D. (Ohio St. U.), Assistant Professor of Medicine (Cardiology).  
Jerry E. Bouquot, D.D.S. (U. Minn.), Professor of Pathology.  
Karl Douglas Bowers, Jr., M.D. (Jeff. Med. Col.), Clinical Professor of Orthopedics  
Carole Brooks Boyd, M.D. (Wayne St. U.), Associate Professor of Pathology.  
Andrew S. Bradlyn, Ph.D. (U. Miss.), Associate Professor of Behavioral Medicine and Psychiatry.  
Lenore A. Breen, M.D. (U. Tex., Med. Brch.), Associate Professor of Neurology.  
James E. Brick, M.D. (WVU), Associate Professor of Medicine (Rheumatology).  
John F. Brick, M.D. (WVU), Associate Professor of Neurology.  
Kathleen P. Brooks, Ph.D. (U. Calif., Davis) Adjunct Assistant Professor of Pathology.  
Paul B. Brown, Ph.D. (U. Chicago), Professor of Physiology.  
Sandy L. Burkart, Ph.D. (WVU), Chairperson, Director, and Professor of Physical Therapy.  
Robert G. Burrell, Ph.D. (Ohio St. U.), Professor of Microbiology and Immunology.  
Fred R. Butcher, Ph.D. (Ohio St. U.), Professor of Biochemistry; Director, Mary Babb Randolph Cancer Center.  
Roy L. Butcher, Ph.D. (Iowa St. U.), Professor of Obstetrics and Gynecology.

Marilyn H. Byrne, A.C.S.W. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry

Stewart J. Callis, M.D. (WVU) Assistant Professor of Behavioral Medicine and Psychiatry.

William J. Canady, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.

Billy Ray Carlton, Ed.D. (U. Tenn.), Professor of Community Medicine.

Marshall J. Carper, M.D. (Med. C. Va.), Professor, Assistant Chairperson and Chair of Family Medicine, Charleston Division.

Peter B. Challoner, Ph.D. (U. C. Berkeley) Assistant Professor of Biochemistry.

William W. L. Chang, M.D. (Nat'l. Taiwan U.), Professor of Radiology.

Judie F. Charlton, M.D. (WVU) Assistant Professor of Ophthalmology.

Nyles Charon, Ph.D. (U. Minn.), Professor of Microbiology and Immunology.

Myra Lee Chiang, M.D. (U. East Philippines), Assistant Professor of Pediatrics, Charleston Division.

Elliott W. Chideckel, M.D. (U. Md.), Professor of Medicine (Metabolism- Endocrinology).

Shawn A. Chillag, M.D. (WVU), Associate Professor of Medicine, Charleston Division.

Elizabeth O. Chung, M.D. (U. Philippines), Assistant Professor of Pediatrics and Neurology.

John P. Claude, M.S.W. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, Charleston.

Paul L. Clausell, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry.

Ronald L. Cleavenger, M.D. (WVU), Associate Professor of Family Medicine and Physician, UHS.

Holly A. Cloonan, Ph.D. (Purdue), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston.

Robert C. Cochran, M.D. (Boston U.), Professor of Surgery, Charleston Division.

Brenda K. Colasanti, Ph.D. (WVU), Professor of Ophthalmology and Pharmacology and Toxicology.

Arthur G. Conn, M.D. (Wayne St. U.), Associate Professor of Radiology (Diagnostic).

John M. Connors, Ph.D. (U. Ill.), Assistant Professor of Physiology.

Linda L. Cook, M.D. (Ohio St. U.), Assistant Professor of Pathology.

William T. Corder, M.D. (N.Y.U.), Assistant Professor of Pediatrics (General).

Scott N. Corin, M.D. (N.Y.U.), Assistant Professor of Ophthalmology.

Vicente Cortes, M.D. (Nat'l U. of Col.), Assistant Professor of Surgery

Thomas H. Covey, Jr., M.D. (Harvard U.), Associate Professor of Surgery (Surgical Oncology).

Donald W. Cox, M.D. (Geo. Wash. U.), Chairperson and Professor of Obstetrics and Gynecology.

Charles R. Craig, Ph.D. (U. Wisc.), Professor of Pharmacology and Toxicology.

Gail K. Crosby, (Med. Col of Va.), Associate Professor of Family Medicine.

Edward B. Crowell, Jr., M.D. (U. Chicago), Associate Professor of Medicine (Hematology Oncology).

Jose Luis Cruzzavala, M.D. (Universidad Autonoma de Tamaulipas Tampico, Tamaulipas), Assistant Professor of Surgery.

James L. Culberson, Ph.D. (Tulane U.), Professor of Anatomy.

Michael E. Cunningham, M.D. (WVU), Assistant Professor of Radiology.

Karen A. Curta, Ph.D. (WVU), Research Assistant Professor of Pharmacology and Toxicology.

Anne C. Cutlip, M.D. (WVU), Assistant Professor of Family Medicine.

William D. Cutlip, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Neurology.

John C. Cwik, M.D. (Jeff. Med. C.), Clinical Professor of Anesthesiology.

Robert D'Alessandri, M.D. (N.Y. Med. C.), Dean, School of Medicine; Professor of Medicine (Comprehensive Medicine).

Rachel A. Dash, M.S.W. (U. Maryland), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Richard Dattola, M.D. (Temple U.), Assistant Professor of Family Medicine.

Mary Elizabeth Davis, Ph.D. (Mich. St. U.), Associate Professor of Pharmacology and Toxicology.

Ronald DeAndrade, Jr., M.D. (Marshall U.), Assistant Professor of Medicine.

Harakh V. Dedhia, M.B.B.S. (Grant Med. C.), Associate Professor of Anesthesiology and Medicine (Critical Care).

Cecelia Dellone, M.D. (U. Pitt.) Instructor of Ophthalmology.

Bharati S. Desai, M.B.B.S. (Baroda Med. C.), Adjunct Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics.

Richard D. Dey, Ph.D. (Mich. St. U.), Associate Professor of Anatomy.

Anthony DiBartolomeo, M.D. (WVU), Professor of Medicine; Section Chief of Rheumatology; Associate Dean of School of Medicine for Clinical Affairs; Medical Director of Ambulatory Care.

Thomas O. Dickey III, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Rocco J. DiGiacchino, M.D. (U. Bologna), Assistant Professor of Radiology.

Charlotte L. Dillis, M.D. (Georgetown U.) Adjunct Assistant Professor of Radiology (Diagnostic).

Richard H. Docherty, M.D. (Godfrey Huggins Sch. of Med.), Assistant Professor of Anesthesiology.

Anthony J. Dominic, Jr., M.D. (Georgetown U.), Instructor of Radiology.

Himanshu M. Doshi, M.B.B.S. (Bombay U.) Instructor of Pathology.

Kenneth H. Douglass, Ph.D. (Carnegie-Mellon U.), Associate Professor of Radiology (Radiation Safety).

Gregory A. Doyle, M.D. (Med. College of Virginia), Assistant Professor of Family Medicine.

Raghvendra K. Dubey, Ph.D. (U India) Research Assistant Professor of Medicine (Cardiology).

John P. Durham, Ph.D. (Ohio St. U.), Professor of Biochemistry.

Timothy D. Dye, M.S. (SUNY), Research Instructor of Pediatrics (Neonatology).

John M. Eckerd, M.D. (Wake Forest), Associate Professor of Pediatrics, Charleston Division.

Peter R. Edelman, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Stanley Einzig, M.D. (U.C.L.A.) Professor of Pediatrics (Cardiology).

Richard W. Eller, M.D. (Temple U.), Professor of Anesthesiology.

Thomas E. Ellis, Psy.D. (Baylor U.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

David M. Elnicki, M.D. (U Pitt) Assistant Professor of Medicine (Comprehensive Medicine).

Julian L. Espiritu, M.D. (U. of Philippines) Assistant Professor of Medicine, Charleston Division.

Marilyn I. Evans, Ph.D. (U. Wash.), Assistant Professor of Biochemistry.

Robert W. Farr, M.D. (WVU) Assistant Professor of Medicine (Infectious Disease).

Steven M. Faynor, Ph.D. (U. Wisc.), Assistant Professor of Pathology.

Joseph G. Feghali, M.D. (Am. U. Beirut), Assistant Professor of Ophthalmology.

Norman D. Ferrari III, M.D. (WVU), Associate Professor of Pediatrics and Medicine (Comprehensive).

Donald C. Fidler, M.D. (U.N.C.) Associate Professor of Behavioral Medicine and Psychiatry.

Melanie A. Fisher, M.D. (Penn St. U.), Adjunct Associate Professor of Medicine (Infectious Diseases).

William W. Fleming, Ph.D. (Princeton U.), Chairperson and Professor of Pharmacology and Toxicology.

Edmund B. Flink, M.D., Ph.D. (U. Minn.), Professor Emeritus of Medicine (Metabolism and Endocrinology) and Behavioral Medicine and Psychiatry (Benedum Professor).

David Fogarty, M.D. (WVU) Clinical Associate Professor of Surgery (Plastic Surgery).

Gunter N. Franz, Ph.D. (U. Wash.), Associate Professor of Physiology.

Michael D. Franzen, Ph.D. (Sou. Ill. U.), Associate Professor of Behavioral Medicine and Psychiatry.

John C. Frich, Jr., M.D. (Geo. Wash. U.), Professor of Radiology and Section Chief of Radiation Therapy.

Morton H. Friedman, Ph.D. (U. Tenn.), Associate Professor of Anatomy.

Mounif El-Youssef, M.D. (Brussels Free U.), Adjunct Assistant Professor of Pediatrics.

James L. Frost, M.D. (Johns Hopkins U.), Professor of Pathology and Neurology and Medical Examiner.

Elizabeth A. Funk, M.D. (Ind. U.), Associate Professor of Medicine (Infectious Diseases), Charleston Division.

Ronald D. Gaskins, M.D. (Med. U. of SC), Professor of Medicine (Gastroenterology).

Vincent F. Gerencser, Ph.D. (U. Ky.), Associate Professor of Microbiology and Immunology.

Mark Gibson, M.D. (Case West.-Res.), Chair and Professor of Obstetrics and Gynecology.

Alan K. Gilman, M.D. (Med. Col of Va.) Assistant Professor of Anesthesiology.

Wilbert E. Gladfelter, Ph.D. (U. Penn), Associate Professor of Physiology.

Douglas D. Glover, M.D. (Emory U.), Professor of Obstetrics and Gynecology.

Elbert D. Glover, Ph.D. (Tex. Women's Col.), Professor of Behavioral Medicine.

Penny N. Glover, M. Ed. (E. Carolina), Research Institute, Behavioral Medicine.

Geoffrey M. Graeber, M.D. (SUNY) Professor of Surgery (Thoracic).

Janet E. Graeber, M.D. (SUNY) Associate Professor of Pediatrics (Neonatology) and Surgery.

Robert L. Goodman, M.D. (U. Pitt), Professor of Physiology.

Howard R. Gordon, M.D. (U. Rochester), Professor of Obstetrics and Gynecology, Charleston Division.

David F. Graf, M.D. (Albany Med. C.), Associate Professor of Anesthesiology.

Deborah S. Granke, M.D. (U. Mich.) Adjunct Assistant Professor of Radiology (Diagnostic).

Kenneth Granke, M.D. (Wayne St. U) Assistant Professor of Surgery (Vascular).

James P. Griffith, M.D. (WVU) Assistant Professor of Medicine and Behavioral Medicine and Psychiatry, Charleston Division.

Frank Griswold, M.D. (WVU) Clinical Associate Professor of Surgery.

Marylyn V. Grondin, M.D. (Mexico) Assistant Professor of Medicine (Gastroenterology).

Richard T. Gross, Ph.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Anesthesiology.

Stephen Grubb, M.D. (Med. C. Va.), Associate Professor of Medicine, Charleston Division.

Robert A. Gustafson, M.D. (WVU), Associate Professor of Surgery (Cardiothoracic Surgery).

Alvaro R. Gutierrez, M.D. (U. National Ncional Day, Rosaril Argentina), Assistant Professor of Neurology.

Barbara J. Gutman, M.Ed. (U. Pitt), Associate Professor of Medical Technology.

Ludwig Gutmann, M.D. (Columbia U.), Chairperson and Professor of Neurology; Professor of Physiology.

Elizabeth A. Elder Hackett, M.D. (Med. U. of SC), Assistant Professor in Anesthesiology.

Kevin A. Halbritter, M.D. (WVU), Assistant Professor in Medicine.

David S. Hall, Ph.D. (U. Ky.), Associate Professor of Community Medicine.

James P. Hall, M.D. (U. Maryland) Assistant Professor of Family Medicine, Charleston Division.

John E. Hall, Ph.D. (Purdue U.), Professor of Microbiology and Immunology.

William L. Hall, M.D. (WVU), Clinical Associate Professor of Medicine (Dermatology).

Carole V. Harris, M.A. (Hollins C.), Assistant Professor of Behavioral Medicine and Psychiatry.

Charles L. Harris, Ph.D. (U. Ill.), Professor of Biochemistry.

Marybeth Harris, M.S. (Med. C. Va.), Associate Professor of Physical Therapy.

Marc W. Haut, Ph.D. (U. of N.D.) Assistant Professor of Behavioral Medicine and Psychiatry.

George A. Hedge, Ph.D. (Stanford U.), Professor of Physiology (Van Liere Professor) and Associate Dean (Research & Graduate Studies).

James D. Helsley, M.D. (WVU), Assistant Professor of Family Medicine.

Marta J. Henderson, M.S. (WVU), Associate Professor of Medical Technology.

William L. Higgins, M.D. (U. Md.), Associate Professor of Radiology (Diagnostic).

Ronald C. Hill, M.D. (WVU), Associate Professor of Surgery (Cardiothoracic Surgery).

Rumy A. Hiloolwala, Ph.D. (U. Ala.), Associate Professor of Anatomy.

Julio Hochberg, M.D. (Faculdade Catolica de Medicina de Porto Alegre RS, Brazil), Associate Professor of Surgery.

Robert D. Hoeldtke, M.D. (Cornell) Professor of Medicine and Section Chief of Metabolism and Endocrinology.

Jean Holter, Ed.D. (WVU), Professor of Medical Technology.

Vickie Williams Hott, M.D. (WVU) Assistant Professor of Radiology (Diagnostic).

William H. Houser, Ph.D. (Med. Col. of Virginia), Assistant Professor of Pharmacology and Toxicology.

Paul B. Hsueh, Ph.D. (Ohio St. U.) Research Instructor of Medicine (Clinical Nutrition).

Linda Huffman, Ph.D. (U. Nebraska), Research Assistant Professor of Physiology.

Marybeth Hummel, M.D. (Ind. U.), Assistant Professor of Pediatrics.

Eric Hamilton Humphries, Ph.D. (U. Wisc.), Professor of Microbiology.

James L. Hurst, M.D. (WVU) Adjunct Assistant Professor of Radiology (Diagnostic).

Richard M. Iammarino, M.D. (Stritch Sch. Med.), Adjunct Professor of Pathology.

Jose E. Irazuzta, M.D. (U. Nacional De Cordoba) Assistant Professor of Pediatrics, Charleston Division.

Michael A. Istfan, M.D. (Marshall U.) Assistant Professor of Medicine, Charleston Division.

Navil M. Jabbour, M.D. (Am. U. Beirut), Associate Professor of Ophthalmology.

Timothy K. Jackson, M.D. (U. Cincinnati), Assistant Professor of Medicine.

Singanallur N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Pathology and Biochemistry.

Abnash C. Jain, M.D. (Govt. Med. C., Patiala), Professor of Medicine; Section Chief of Cardiology.

Pushpa R. Jain, M.D. (Grant Med. C.), Associate Professor of Radiology (Radiation Therapy).

Leslie C. Jameson, M.D. (U. Iowa), Associate Professor of Anesthesiology.

Shanker Japa, Ph.D. (Jawaharlal Nehru U.), Research Instructor in Biochemistry.

Chet D. Johnson, M.D. (U. Kans.), Assistant Professor (SM) of Pediatrics.

Jerome G. Johnson, M.D. (U. of Minn.) Clinical Assistant Professor of Surgery.

Michael D. Johnson, Ph.D. (U. Mich.), Professor of Physiology.

Eric T. Jones, M.D. (U. Mich.), Clinical Professor of Orthopedic Surgery.

John E. Jones, M.D. (U. Utah), Professor of Medicine (Metabolism and Endocrinology); Vice President for Health Sciences.

Kim Maria Jordan, M.D. (Marshall U.), Adjunct Assistant Professor of Medicine

Dale M. Joret, M.D. (Temple U.) Assistant Professor of Obstetrics and Gynecology.

Frances B. Juriga, M.S. (WVU) Assistant Professor of Medical Technology.

Stanley J. Kandzari, M.D. (WVU), Professor of Urology.

Howard H. Kaufman, M.D. (Columbia U.), Chairperson and Professor of Neurological Surgery.

Robert W. Keefover, M.D. (Marshall U.), Assistant Professor of Behavioral Medicine and Psychiatry and Neurology.

John F. Kelley, M.D. (McGill U.), Professor of Behavioral Medicine and Psychiatry and Pediatrics.

Gordon Keyes, D.D.S. (U. Md.), Professor of Pathology.

Rashida A. Khakoo, M.D. (Makerere U.), Professor of Medicine and Section Chief of Infectious Diseases.

Christine R. Kincaid, M.D. (WVU) Assistant Professor of Pediatrics and Physician in University Health Service.

John H. King, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Roger E. King, M.D. (WVU) Clinical Professor of Surgery.

Ralph G. Kirk, Ph.D. (Yale U.), Professor of Anatomy.

John E. Kizer, M.D. (U.C. Davis) Instructor of Surgery (Trauma).

Penprapa Satruelee Klinkachorn, Ph.D. (WVU), Visiting Instructor of Anatomy.

Kazunari J. M. Koike, Ph.D. (U. Tennessee), Associate Professor of Otolaryngology.

Martin J. Kommor, M.D. (U. S.C.), Associate Professor and Assistant Chairperson of Behavioral Medicine and Psychiatry; Chief, Charleston Division.

Gregory W. Konat, Ph.D. (Odense U.) Professor of Anatomy and Pediatrics.

Jane M. Kotchen, M.D. (Case West. Res. U.), Professor of Medicine (Clinical Nutrition).

Theodore A. Kotchen, M.D. (Case West. Res. U.), Chairperson and Professor of Medicine.

Rodney F. Kovach, M.D. (WVU), Assistant Professor of Medicine (Dermatology) and Otolaryngology.

Robert E. Kramer, M.D. (M.S. Hershey Medical Center) Assistant Professor of Pathology (Clinical Pathology).

Markus K. Kung, M.D. (U. Geneva), Assistant Professor of Medicine (Pulmonary Medicine).

Lloyd Kurth, D.O. (WV Sch. Osteo. Med.), Clinical Instructor in Orthopedic Surgery.

Donald L. Lamm, M.D. (UCLA), Chairperson and Professor of Urology.

Kenneth S. Landreth, Ph.D. (U. Wash.), Associate Professor of Microbiology and Immunology.

Eugene S. LaPlante, M.D. (U. of Minn.) Clinical Associate Professor of Surgery.

N. LeRoy Lapp, M.D. (Temple U.), Professor of Medicine (Pulmonary Medicine).

Gregory L. Larkin, M.D. (Penn State U.) Instructor of Surgery (Emergency Medicine).

Richard D. Layne, M.D. (WVU), Assistant Professor of Medicine (Comprehensive Medicine).

Ping Lee, Ph.D. (Duke U.), Professor and Interim Assistant Chairperson of Physiology.

Judith A. Leedham, Ph.D. (Monash U.-Australia) Research Assistant Professor of Pharmacology and Toxicology.

Michael J. Lewis, M.D. (WVU), Chairperson and Professor of Family Medicine.

John C. Linton, Ph.D. (Kent St. U.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Joseph H. Liput, Jr., M.D. (U. Pitt), Assistant Professor (SM) of Medicine (Nephrology).

Karen S. Long, M.S. (WVU) Assistant Professor of Medical Technology.

Juanita K. Loy, BSPT (WVU) Visiting Instructor of Physical Therapy.

Frank C. Lucente, M.D. (WVU) Assistant Professor of Surgery, Charleston Division.

Andrew H. Mace, Jr., M.D. (WVU), Associate Professor of Radiology (Diagnostic).

Marian S. Macsai, M.D. (Rush U.) Assistant Professor of Ophthalmology.

Jamal Mahin, M.D. (Tehran Med. Sch.), Assistant Professor of Pathology (Clinical).

Daniel A. Mairs, M.D. (Duke U.), Professor, Assistant Chairperson and Chief of Charleston Division of Obstetrics-Gynecology.

Charles Hayes Mann, M.D. (WVU), Associate Professor of Otolaryngology.

Paris T. Mansmann, M.D. (Jefferson Med. Col.) Assistant Professor of Pediatrics and Medicine (Allergy).

James D. Martin, M.D. (Vanderbilt U.), Professor of Neurology.

Orestes A. Martinez, M.D. (Fac. Med. San Fernando), Professor of Anesthesiology.

Michael G. Mawhinney, Ph.D. (WVU), Professor of Urology and Pharmacology and Toxicology.

Leeman P. Maxwell, M.D. (WVU) Assistant Professor of Medicine (Cardiology).

Tandy J. McClung, Ed.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Eugene R. McDannald, Jr., M.D. (Med. Col. of Va.) Associate Professor of Surgery.

Michael W. McDonald, M.D. (Tulane U.) Associate Professor of Urology.

Donald E. McDowell, M.D. (Temple U.), Associate Professor of Surgery (Vascular Surgery).

Claude McFarlane, M.D. (U. of N.C.) Assistant Professor of Anesthesiology.

Deborah G. McFarlane, Ph.D. (U of S. Fl.) Assistant Professor of Behavioral Medicine and Psychiatry.

James E. McJunkin, M.D. (WVU), Associate Professor of Pediatrics, Charleston Division.

William O. McMillan, M.D. (Duke U.), Professor of Medicine (Gastroenterology) and Associate Vice President for Health Sciences, Charleston Division.

Catalino B. Mendoza, Jr., M.D. (Manila Central U.), Clinical Professor of Surgery (General Surgery).

Henry F. Mengoli, Ph.D. (Cath. U. Am.), Associate Professor of Microbiology and Immunology.

Alan J. Merkow, M.D. (Med. Col. of Wisc.), Associate Professor of Anesthesiology.

Mieczyslaw Michalkiewicz, Ph.D. (Warsaw Agricultural U., Poland), Research Assistant Professor of Physiology.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), Associate Professor of Physiology.

Michael Miller, Ph.D. (Penn St. U.), Professor of Biochemistry.

Philip J. Monroe, Ph.D. (WVU), Research Assistant Professor of Anesthesiology.

Renee Saggio Moore, M.D. (WVU), Adjunct Instructor in Pediatrics.

David M. Morgan, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Physician in University Health Service.

David Z. Morgan, M.D. (Med. C. Va.), Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Director of Geriatric Program.

Edwin J. Morgan, M.D. (U. Pitt), Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service.

Winfield S. Morgan, M.D. (Temple U.), Professor and Interim Chairperson of Pathology.

Anthony P. Morise, Jr., M.D. (U. Vt.), Associate Professor of Medicine (Cardiology).

Alvin H. Moss, M.D. (U. Penn), Associate Professor of Medicine (Nephrology); Director of Ethics Program.

Martha K. Mullett, M.D. (WVU), Professor of Pediatrics.

Gordon F. Murray, M.D. (U. Mich.), Chairperson and Professor of Surgery; Section Chief of Cardiothoracic Surgery.

David Z. Myerberg, M.D. (Columbia C.), Associate Professor of Pediatrics.

Charlotte Nath, Ed.D. (WVU), Associate Professor of Family Medicine.

William A. Neal, M.D. (WVU), Chairperson and Professor of Pediatrics.

Victor F. Nease, M.D. (Marshall U.) Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Jeffrey L. Neely, M.D. (WVU), Associate Professor of Medicine (Comprehensive Medicine).

Owen A. Nelson, M.D. (U. of Cal-San Diego) Clinical Assistant Professor of Orthopedic Surgery.

Neal A. New Field, Ph.D. (Texas Tech U.) Assistant Professor of Behavioral Medicine and Psychiatry.

Patton V. Nickell, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry and Medicine (Comprehensive Medicine).

William E. Noble, M.D. (U. Pitt), Clinical Associate Professor of Medicine, Wheeling Division.

T. Michael Nork, M.D. (U. Tex. Med. Sch., San Antonio), Assistant Professor (SM) of Ophthalmology.

Lamont D. Nottingham, Ed.D. (U. Va.), Adjunct Assistant Professor of Community Medicine, Charleston Division; Interim Research Associate of Community Medicine.

G. Robert Nugent, M.D. (U. Cincinnati), Professor of Neurological Surgery.

James V. Odom, Ph.D. (U. N.C.), Associate Professor of Ophthalmology.

Gregg M. O'Malley, M.D. (U. of Pitt) Clinical Instructor of Orthopedic Surgery.

Rawhi A. Omar, M.D. (Med. Acad. Sofia) Associate Professor of Pathology.

Laurel A. Omert, M.D. (Loyola) Assistant Professor of Surgery. (Trauma).

Henry W. Overbeck, M.D., Ph.D. (Northwestern, U. Okla.) Professor of Medicine (Cardiology) and Physiology.

Dennis O. Overman, Ph.D. (U. Mich.), Associate Professor of Anatomy.

Thomas Glenn Pait, M.D. (Geo. Wash. U.), Assistant Professor of Neurosurgery.

Jan E. Palmer, M.D. (SUNY), Associate Professor of Family Medicine and Physician, University Health Service.

Jyoti R. Patel, M.B.B.S. (M.S. Univ, Baroda, India) Instructor of Family Medicine and Physician in University Health Service.

Rita K. Payne, M.D. (U. Texas-Galveston) Assistant Professor of Obstetrics and Gynecology.

Richard J. Pearson, M.D. (Cambridge U.), Chairperson and Professor of Community Medicine; Professor of Family Practice.

Kathaleen C. Perkins, M.D. (Albany Med. College) Assistant Professor of Pediatrics and Physician in University Health Service.

Victor T. Perrone, M.D. (U. of Guadalajara) Clinical Associate Professor of Medicine, Wheeling Division.

Jane A. Pertko, P.T. (WVU), Assistant Professor of Physical Therapy.

John J. Petronis, M.S. (WVU), Professor of Physical Therapy.

Carlin A. Pinkstaff, Ph.D. (Emory U.), Professor of Anatomy.

W. Warren Point, M.D. (Harvard U.), Professor Emeritus of Medicine.

Mark J. Polak, M.D. (WVU), Assistant Professor of Pediatrics.

Cecil R. Pollard, M.A. (Georgetown U.) Research Assistant Professor of Community Medicine.

Scott E. Pollard, M.D. (U. Tex.), Assistant Professor of Behavioral Medicine and Psychiatry.

Charles D. Ponte, Pharm.D. (U. Utah), Professor of Family Medicine.

Robert Pope, Ph.D. (U. N. Dak.), Associate Professor of Anatomy.

Robert S. Pore, Ph.D. (UCLA), Professor of Microbiology and Immunology.

Roxann L. Powers, M.D. (WVU), Associate Professor of Medicine (Comprehensive Medicine) and Section Chief of Comprehensive Medicine.

John E. Prescott, M.D. (Georgetown U.) Assistant Professor of Surgery (Emergency Medicine).

James M. Previll, M.D. (WVU) Associate Professor of Medicine, Charleston Division.

Kathleen U. Previll, M.D. (WVU) Assistant Professor of Pediatrics, Charleston Division.

Lee A. Pyles, M.D. (WVU) Assistant Professor of Pediatrics (Cardiology).

Eugene A. Quarrick, Ph.D. (Syracuse U.), Professor of Behavioral Medicine and Psychiatry.

Pedro R. Rademacher, M.D. (Chile) Assistant Professor of Medicine (Nephrology).

Gale W. Rafter, Ph.D. (U. Wash.), Professor of Biochemistry.

Peter C. Raich, M.D. (U. Wisc.), Professor of Medicine and Section Chief of Hematology/Oncology.

William D. Ramsey, M.D. (WVU), Assistant Professor of Surgery.

Eric D. Rankin, Ph.D. (U. Chicago), Assistant Professor of Behavioral Medicine and Psychiatry.

Kenneth J. Reamy, M.D. (Tufts U.), Professor of Obstetrics and Gynecology and Behavioral Medicine and Psychiatry.

Mark J. Reasor, Ph.D. (Johns Hopkins U.), Professor of Pharmacology and Toxicology.

Stephen C. Rector, M.D. (U. Minn.), Associate Professor of Surgery (Emergency Room) and Medicine (Comprehensive Medicine); Director, Emergency Room.

Reddy S. Reddy, Ph.D. (WVU) Research Assistant Professor of Medicine (Metabolism and Endocrinology).

Robert B. Reger, Ph.D. (WVU) Research Associate Professor of Occupational Medicine.

Frank D. Reilly, Ph.D. (U. Cincinnati), Professor of Anatomy.

Larry A. Rhodes, M.D. (WVU) Adjunct Instructor of Pediatrics (Cardiology).

Joelyn M. Richards, M.D. (U. Minn.) Assistant Professor of Medicine (Nephrology).

Jack E. Riggs, M.D. (U. Rochester), Professor of Neurology and Medicine.

Orval E. Riggs, M.D. (U. Arkansas), Associate Professor of Surgery (Cardiothoracic Surgery).

Cheryl M. Riley, M.A. (U. of Arkansas) Instructor of Behavioral Medicine and Psychiatry.

A. Kim Ritchey, M.D. (U. Cincinnati), Associate Professor of Pediatrics.

Susan K. Ritchie, M.P.H. (U. N.C.), Research Assistant Professor of Pediatrics.

Nicolene L. Roberts, Assistant Professor of Behavioral Medicine and Psychiatry.

Marian Roberts-Ward, MSW (WVU), Assistant Professor of Behavioral Medicine.

Joan Robison, Ph.D. (U. Ga.), Associate Professor of Behavioral Medicine and Psychiatry,

Charleston Division.

- Satyabhlashi P. Rochlani, M.B.B.S. (U. Madras), Associate Professor of Pathology.
- Jeanne A. Rodman, M.D. (U. Iowa), Adjunct Professor of Anesthesiology.
- Nathaniel F. Rodman, M.D. (U. Penn.), Professor of Pathology.
- John S. Rogers, M.D. (Geo. Wash. U.), Associate Professor of Medicine (Hematology/Oncology).
- William D. Rose, M.D. (WVU), Assistant Professor of Surgery, Emergency Room.
- Adrienne K. Salm, Ph.D. (Michigan State U.) Assistant Professor of Anatomy and Neurosurgery.
- Okey H. Sanford, Jr., M.D. (WVU) Associate Professor of Family Medicine.
- Atef K. Sayed, M.B.B.C. (Cairo U.) Assistant Professor of Pathology.
- Franklin G. Schiebel, M.D. (U. Mex.), Associate Professor of Anesthesiology and Neurological Surgery.
- Stanley B. Schmidt, M.D. (U. Va.), Associate Professor of Medicine (Cardiology).
- Sydney S. Schochet, Jr., M.D. (Tulane U.), Professor of Pathology, Neurology and Neurological Surgery.
- Terry L. Schwartz, M.D. (WVU) Assistant Professor of Ophthalmology.
- Steve L. Seibert, M.D. (WVU) Associate Professor of Family Medicine.
- Richard J. Seime, Ph.D. (U. Minn.), Associate Professor of Behavioral Medicine and Psychiatry.
- Debra S. Selby, M.D. (WVU) Assistant Professor of Pediatrics (General).
- John M. Shamma'a, M.D. (Emory U.), Assistant Professor of Medicine (Gastroenterology).
- Thomas K. Shehan, D.V.M. (Ohio St. U.), Associate Professor of Pathology.
- James M. Sheil, Ph.D. (U. Ky.), Assistant Professor of Microbiology and Immunology.
- Lauralee Sherwood, D.V.M. (Mich. St. U.), Professor of Physiology.
- Andrew K. Shiemke, Ph.D. (Oregon Grad. Ctr.) Assistant Professor of Biochemistry.
- William T. Shockcor, M.D. (U. Vermont) Assistant Professor of Medicine (Comprehensive Medicine).
- Jeffrey S. Shultz, M.D. (WVU), Professor of Medicine and Chief of Medicine, Wheeling Division.
- James M. Shumway, Jr., Ph.D. (U. N.C.), Associate Professor of Medicine and Assistant Dean (Curricular Affairs).
- Doyle R. Sickles, M.D. (WVU) Clinical Instructor of Orthopedic Surgery.
- Rosanne D. Sikora, M.D. (WVU) Assistant Professor of Surgery (Emergency Medicine), Pediatrics and Medicine.
- Kenneth J. Simon, D.Ed. (Columbia U.) Associate Professor of Community Medicine.
- Jan C. Singleton, Ph.D. (Penn State U.) Assistant Professor of Community Medicine.
- Purendra Sinha, M.B.B.S. (Patna Med. C.—India), Associate Professor of Radiology (Radiation Therapy).
- Stephen T. Slack, Ph.D. (Penn St. U.), Associate Professor of Radiology and Section Chief of Radiation Safety.
- Raymond A. Smego, Jr., M.D. (U. of N.J.) Associate Professor of Medicine (Infectious Diseases).
- David J. Smith, Ph.D. (WVU), Professor of Anesthesiology and Pharmacology and Toxicology.
- Guy K. Smith, Ph.D. (Med. Col. of Va.), Assistant Professor of Radiology.
- Irvin S. Snyder, Ph.D. (U. Kans.), Chairperson and Professor of Microbiology and Immunology.
- Abdolkarim Sohrabi, M.D. (Jondishapour U.) Associate Professor of Surgery (Oncology).
- Paulinus J. Sorg, M.D. (Med. Col. of Va.), Assistant Professor of Physical Therapy.
- Michael Sorkin, M.D. (Northwestern) Associate Professor of Medicine and Section Chief of Nephrology.
- George Arthur Spiro, Ph.D. (U. Fla.), Assistant Professor of Otolaryngology.
- Walter S. Stalenski, M.D. (Med. Col. Ohio), Assistant Professor of Anesthesiology.
- Kenneth A. Starling, M.D. (Duke U.), Professor and Assistant Chairperson of Pediatrics, Charleston Division.
- William T. Stauber, Ph.D. (Rutgers U.), Professor of Physiology and Neurology.
- Marie E. Steiner, M.D. (U. of Minnesota) Assistant Professor of Pediatrics.
- Larry J. Stemple, M.D. (WVU) Clinical Assistant Professor of Orthopedic Surgery.
- Arlene J. Stern, M.D. (Hahnemann Med. C.), Associate Professor of Medicine, Wheeling Division.
- James M. Stevenson, M.D. (WVU), Chairperson and Professor of Behavioral Medicine and

Psychiatry; Professor of Medicine and Section Chief of Behavioral and Ambulatory Medicine; Associate Dean (C.M.E. and Development).

Robert E. Stitzel, Ph.D. (U. Minn.), Professor and Associate Chairperson of Pharmacology and Toxicology.

David A. Stoll, M.D. (U. Iowa), Clinical Assistant Professor of Orthopedic Surgery.

Richard J. Strasburger, Ed.D. (WVU), Research Associate Professor of Pediatrics.

Jeannine Strobl, Ph.D. (Geo. Wash. U.), Associate Professor of Pharmacology and Toxicology.

Edward H. Stullken, M.D. (U. Ill.) Chairperson and Professor of Anesthesiology.

C. Rollyn Sullivan, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, and Medicine.

Pamela M. Sullivan, M.D. (WVU), Adjunct Associate Professor of Behavioral Medicine and Psychiatry.

John A. Surmonte, M.D. (Jeff. Med. C.), Clinical Professor of Surgery (General Surgery).

Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), Instructor in Pediatrics.

Shiro Suzuki, Ph.D. (National Kyusyu U.), Research Professor of Ophthalmology.

Marian L. Swinker, M.D. (Penn St. U.), Associate Professor of Family Medicine.

William F. Tarry, M.D. (M. S. Hershey Med. Sch.), Associate Professor of Urology and Pediatrics.

David A. Taylor, Ph.D. (WVU), Professor of Pharmacology and Toxicology.

Harry L. Taylor, M.D. (Med. Col of Ga.) Associate Professor of Pathology and Section Chief of Clinical Pathology.

Luis Teba, M.D. (U. Granada Med. Sch.—Spain), Associate Professor of Anesthesiology and Medicine (Critical Care).

John G. Thomas, Ph.D. (Syracuse U.) Professor of Pathology (Clinical Pathology).

Herbert Thompson, Ph.D. (U. Kans.), Associate Professor of Microbiology and Immunology.

Gregory A. Timberlake, M.D. (U.Va.) Associate Professor of Surgery (Trauma).

Louis W. Tinnin, M.D. (U. Chicago), Associate Professor of Behavioral Medicine and Psychiatry.

Roger C. Toffle, M.D. (U. Minn.), Associate Professor of Obstetrics and Gynecology.

John W. Traubert, M.D. (Ohio St. U.), Professor of Family Medicine and Associate Dean, School of Medicine (Student Affairs).

Dianne W. Trumbull, M.D. (U. N.C.), Adjunct Assistant Professor of Behavioral Medicine and Psychiatry.

George P. Tryfiates, Ph.D. (Rutgers U.), Professor of Biochemistry.

Irma H. Ullrich, M.D. (U. Minn.), Professor of Medicine (Metabolism- Endocrinology).

Knox Van Dyke, Ph.D. (St. Louis U.), Professor of Pharmacology and Toxicology.

Robert A. Vance, M.D. (WVU), Assistant Professor of Anesthesiology.

John R. Vanin, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry; Physician, UHS.

Richard A. Vaughan, M.D. (WVU), Assistant Professor of Surgery (Surgical Oncology).

Joseph Voelker, M.D. (Ind. U.), Assistant Professor of Neurosurgery.

Kent E. Vrana, Ph.D. (LSU), Assistant Professor of Biochemistry.

Donald M. Wald, M.D. (U. Kansas), Associate Professor and Section Chief of Diagnostic Radiology.

James M. Waldeck, M.D. (WVU) Assistant Professor of Pediatrics, Charleston Division.

David K. Walker, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, Charleston

Elizabeth R. Walker, Ph.D. (WVU), Associate Professor of Anatomy.

Herbert E. Ward, Jr., M.D. (Med. Col. of S.C.) Assistant Professor of Behavioral Medicine and Psychiatry.

Herbert E. Warden, M.D. (U. Chicago), Ph.D. (U. Ill.), Professor of Surgery (Cardiothoracic Surgery).

Elbert G. Warren, M.D. (U. of Texas-Galveston) Clinical Instructor Obstetrics /Gynecology, Charleston.

Mark Kenneth Wax, M.D. (U. Toronto), Assistant Professor of Otolaryngology.

David L. Waxman, M.D. (U. Md.), Clinical Instructor of Orthopedics.

Carol J. Weaver, Ph.D. (WVU), Associate Professor of Physical Therapy.

Bruce Weinstein, Ph.D. (Georgetown U.) Research Assistant Professor of Community Medicine.

George W. Weinstein, M.D. (SUNY), Chairperson and Professor of Ophthalmology.

William A. Welton, M.D. (U. Md.), Professor of Medicine and Section Chief of Dermatology.

Stephen J. Wetmore, M.D. (U. Mich.), Chairperson and Professor of Otolaryngology.

Charles R. Whiteman II, M.D. (WVU), Instructor in Surgery.

Richard C. Wiggins, Ph.D. (Duke U.), Chairperson and Professor of Anatomy.

Deborah Willard, M.D. (WVU), Associate Professor of Radiology (Diagnostic).

Mary J. Wimmer, Ph.D. (U. N.C.), Associate Professor of Biochemistry.

George H. Wirtz, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.  
 William Wonderlin, Ph.D. (Johns Hopkins U.), Assistant Professor of Pharmacy.  
 William D. Wyant, M.S.E., M.P.A. (WVU), Associate Professor of Community Medicine.  
 David B. Yelton, Ph.D. (U. Mass.), Associate Professor of Microbiology and Immunology.  
 Stanley D. Yokota, Ph.D. (U. Calif.—Riverside), Assistant Professor of Physiology.  
 Karen A. Zaboy, M.D. (Penn St.), Assistant Professor of Pediatrics.  
 Fereydoon Zangeneh, M.D. (Univ. of Tehran) Associate Professor of Pediatrics, Charleston Division.

### **Medical Technology**

Jean D. Holter,\* Ed.D. (WVU)-Program Director. Professor, Medical technology, Chemistry, Instrumentation.  
 Richard M. Iammarino, M.D. (Loyola U). Director, Clinical Laboratories. Professor, Pathology, Biochemistry.  
 Nathaniel F. Rodman, M.D. (U. Penn). Professor, Pathology, Coagulation.  
 John G. Thomas, Ph.D. (Syracuse U.). Microbiology, Immunology.  
 Singanallur N. Jagannathan, Ph.D. (U. Bombay). Assoc. Professor, Pathology, Biochemistry.  
 Harry L. Taylor, Jr.,\* M.D. (Med. Coll Ga). Assoc. Professor, Immunohematology.  
 Steven M. Faynor,\* Ph.D. (U. Wisc.). Assistant Professor, Chemistry.  
 Robert E. Kramer,\* M.D. (Hershey Med. Center of Penn St. U.). Assistant Professor, Immunohematology.

### **School of Nursing**

Shauna Aurelio, R.N., M.S.N. (WVU), Visiting Instructor.  
 Barbara Banonis, R.N., M.S.N. (WVU), Lecturer.  
 Gloria Barrett, R.N., R.N., M.S. (Tex. Wom. U.), Instructor  
 Andrea Bauer, R.N., B.S.N. (WVU), Lecturer.  
 Marjorie Bower, R.N., M.S.N. (WVU), Instructor.  
 Lucinda M. Brown, R.N., C.N.M., M.S.N.(U. Ky.), Adjunct Instructor.  
 Mary Louise Brown, R.N., Ph.D. (U. Pitt), Visiting Assistant Professor;Coordinator, Glenville/WVU Joint Program.  
 Margaret Anne Burkhardt, R.N., M.S.N. (U. Rochester), Assistant Professor.  
 Mary Jo Butler, R.N., Ed.D. (WVU), Associate Professor; Chairperson, Charleston Unit.  
 Victoria Casey, R.N., M.S.N.(WVU), Visiting Instructor.  
 Caroline Charonko, R.N., M.S.N. (WVU), Visiting Assistant Professor.  
 Mona M. Counts, R.N., Ph.D. (U. Tex.), Professor.  
 Theresa Cowan, R.N., M.S.N. (WVU), Visiting Instructor.  
 Daniel DeFeo, R.N., M.A. (U. Iowa), Visiting Instructor.  
 Pamela Deiriggi, R.N., Ph.D. (U. Tex.), Assistant Professor.  
 Patricia A. Diehl, R.N., M.A. (WVU), Associate Professor.  
 Imogene P. Foster, R.N., M.S.N. (WVU), Assistant Professor.  
 Pamela Grace, R.N., B.S.N. (WVU), Visiting Instructor.  
 Suzanne W. Gross, R.N., M.N.Ed. (U. Pitt.), Assistant Professor; Chairperson, Junior Unit.  
 Debra L. Harr, R.N., C.N.M., Ed.D. (WVU), Associate Professor.  
 Patricia Hiser, R.N., M.S. (Russell Sage), Visiting Instructor.  
 Jean Hoff, R.N., M.P.H. (U. Pitt.), Visiting Associate Professor.  
 Lorita D. Jenab, R.N., Ed.D. (Columbia U.), Professor and Dean.  
 Dorothy M.B. Johnson, R.N., Ed.D. (WVU), Assistant Professor.  
 Judith C. Kandzari, R.N., M.S.N. (WVU), Associate Professor.  
 Beverly Knicey, R.N., M.S.N. (WVU), Instructor.  
 Nancy A. Koontz, R.N., M.S.N. (U. Md.), Associate Professor.  
 Barbara Koster, R.N., M.S.N. (WVU), Adjunct Instructor.  
 Barbara Kupchak, R.N., Ph.D. (U. Tex.), Visiting Assistant Professor.  
 Suzanne Kusserow, R.N., M.S.N. (Yale), Assistant Professor.  
 Bonnie Legg, R.N., M.S.N. (U. Md.), Adjunct Instructor.  
 Susan Leight, R.N., M.S.N. (WVU), Instructor.  
 Nan Leslie, R.N., Ph.D. (U. Pitt.), Assistant Professor.  
 Sandra Marra, R.N., M.S.N. (WVU), Instructor.  
 Kathleen H. Marsland, R.N., M.S. (U. Colo.), Assistant Professor.

Gaynelle McKinney, R.N., M.S.N.Ed.(Ind. U.), Professor, Chair of Senior Unit.

Elise Michaels, R.N., Ph.D. (Case West. Res. U.), Adjunct Associate Professor.

Karen E. Miles, R.N., Ed.D. (WVU), Associate Professor.

Marsha F. Mitchell, R.N., Ed.D. (WVU), Assistant Professor.

Alvita Nathaniel, R.N., M.S.N. (WVU), Lecturer.

Cynthia Neely, R.N., M.S.N. (WVU), Adjunct Assistant Professor.

Mary Nemeth-Pyles, R.N., M.S.N. (WVU), Instructor.

Susan Newfield, R.N., C.S., M.S.N. (U. Tex.), Assistant Professor.

Barbara Nunley, R.N., M.S. (Ohio State), Visiting Instructor.

Lois O'Kelley, R.N., M.S.N. (Wayne St. U.), Associate Professor Emeritus.

C. Lynne Ostrow, R.N., Ed.D. (WVU), Associate Professor.

Marjorie Phillips, R.N., M.N.Ed. (U. Pitt.), Assistant Professor.

Jacqueline W. Riley, R.N., M.N. (U. Fla.), Associate Professor; Assistant Dean

Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt.), Associate Professor.

Patricia A. Simoni, R.N., Ed.D. (WVU), Associate Professor.

Lisa Sinacore, R.N., M.S. (St. Louis U.), Instructor.

Marilyn Smith, R.N., M.S. (U. Mich.), Instructor.

Mary Jane Smith, R.N., Ph.D. (NYU), Professor.

Frances Snodgrass, R.N., M.S.N. (Tex. Wom. U.), Lecturer.

Loreto Sobong, Ph.D. (NYU), Research Associate.

Jacqueline Stemple, R.N., Ed.D. (WVU), Associate Professor; Chairperson, Sophomore Unit; Interim Chairperson, Graduate Unit.

Fredona Stenger, R.N., M.S.N. (Boston U.), Associate Professor.

Martha Summers, R.N., B.S.N. (Alderson-Broadbent C.), Lecturer.

Sally M. Taylor, R.N., M.A. (WVU), Adjunct Assistant Professor.

Pamela Thompson, R.N., M.S.N. (Med. C. Ga.), Visiting Instructor.

Janet F. Wang, R.N., Ph.D. (U. Pitt.), Associate Professor.

Alison Witte, R.N., M.S. (U. Md.), Lecturer.

### **School of Pharmacy**

Marie A. Abate, Pharm.D. (U. Mich.), Associate Professor of Clinical Pharmacy; Director, Drug Information Center; Vice-Chairperson, Charleston Division.

C. Bruce Alderman, B.S. (WVU), Clinical Instructor.

Joseph Alderson III, B.S. (WVU), Clinical Instructor.

Scot A. Anderson, B.S. (WVU), Clinical Instructor.

Wayne L. Atkinson, B.S. (WVU) Clinical Instructor.

Debora J. Bail, B.S. (WVU), Clinical Instructor.

Harvey P. Barton, B.S. (WVU), Clinical Instructor.

James D. Bartsch, B.S. (U. Wisc.), Clinical Assistant Professor.

Thomas B. Bay, B.S. (U. Wyoming), Clinical Instructor.

Paul Bezilla, B.S. (WVU), Clinical Instructor.

Jerry A. Bovenizer, B.S. (WVU), Clinical Instructor.

J. Scott Boyd, B.S. (WVU), Clinical Instructor.

Heidi Braun, Pharm.D. (U. Mich.), Clinical Assistant Professor.

Calvin C. Brister, Ph.D. (U. Miss.), Professor of Biopharmacy; Assistant Dean for Student Affairs.

David W. Brosh, B.S. (WVU), Clinical Instructor.

David M. Caplan, B.S. (WVU), Clinical Instructor.

John V. Carney, B.S. (WVU), Clinical Instructor.

Mary Castiglia, Pharm. D. (Med. U. of S. Caro.), Ass't. Professor of Clinical Pharmacy.

Thomas S. Clark, M.D. (WVU), Clinical Assistant Professor.

Roger S. Cole, B.S. (WVU), Clinical Instructor.

James K. Coleman, B.S. (WVU), Clinical Instructor.

John E. Corkrean, B.S. (WVU), Clinical Instructor.

Kathryn P. Craddock, B.S. (Ohio St. U.), Clinical Instructor.

D. Stephen Crawford, B.S. (WVU), Clinical Instructor.  
 R. Scott Criss, B.S. (WVU), Clinical Instructor.  
 Stephen G. Crowe, B.S. (WVU), Clinical Instructor.  
 David L. Dalton, B.S. (WVU), Adjunct Instructor in Pharmacy Administration.  
 Mary E. Davis, Ph.D. (Mich. St. U.), Associate Professor of Pharmacology.  
 Robert G. Davis, B.S. (WVU), Clinical Instructor.  
 Teresa Knight Davis, B.S. (WVU), Clinical Instructor.  
 Jacalyn H. Denemark, B.S. (WVU), Clinical Instructor.  
 Kelly Tarleton-Duarte, B.S. (WVU), Clinical Instructor.  
 J. Richard Eddy, M.S. (U. Md.), Clinical Instructor.  
 David P. Elliott, Pharm.D. (U. Tex.), Assoc. Professor, Clinical Pharmacy, Charleston Div.  
 Gary M. Fragale, B.S. (WVU), Clinical Instructor.  
 Robert L. Foster, Jr., B.S. (Auburn U.), Clinical Instructor.  
 Linda Frederick, B.S. (WVU), Clinical Instructor.  
 Jack E. Fruth, B.S. (Ohio St. U.), Clinical Instructor.  
 A. Randon Fusco, B.S. (WVU), Clinical Instructor.  
 Peter Gannett, Ph.D. (U. Wisc.), Ass't. Professor of Medicinal Chemistry.  
 Barbara J. Gastineau, B.S. (WVU), Clinical Instructor.  
 Thomas D. Gerkin, B.S. (WVU), Clinical Instructor.  
 Cathy Gibson, B.S. (U. Wisc.), Clinical Instructor.  
 Gwendolyn S. Gill, M.S. (WVU), Clinical Instructor.  
 Douglas D. Glover, M.D. (Emory U.), Associate Professor of Clinical Pharmacy.  
 C. Rodney Godwin, B.S. (WVU), Clinical Instructor.  
 Rochelle Goto, B.S. (Mass. C. Pharm.), Adjunct Instructor in Pharmacy Administration.  
 Joseph F. Griffith, B.S. (WVU), Clinical Instructor.  
 Robert K. Griffith, Ph.D. (Ohio St. U.), Associate Professor of Medicinal Chemistry.  
 Willard S. Griffith, B.S. (Cincinnati C. Pharm.), Clinical Instructor.  
 John W. Griffiths, B.S. (Ohio St. U.), Clinical Instructor.  
 Roy Gryskevich, B.S. (WVU), Clinical Instructor.  
 Danny J. Hackett, B.S. (WVU), Clinical Instructor.  
 Frank A. Hamilton III, B.S. (WVU), Clinical Instructor.  
 J. Douglas Hammond, B.S. (WVU), Clinical Instructor.  
 Harold D. Harrison, B.S. (U. Md.), Clinical Instructor.  
 Paul S. Helfrich, B.S. (MCV), Clinical Instructor.  
 Theodore D. Henry, B.S. (WVU), Clinical Instructor.  
 Jeffrey A. Hess, B.S. (WVU), Clinical Instructor.  
 Jennifer Heyman, B.S. (WVU), Clinical Instructor.  
 Robert D. Hickman, B.S. (WVU), Clinical Instructor.  
 Gerry Higa, Pharm. D. (U. Pacific), Ass't. Professor of Clinical Pharmacy.  
 Virginia R. Hill, B.S. (WVU), Clinical Instructor.  
 Robert Hockenberry, B.S. (WVU), Clinical Instructor.  
 L. Dean Holmes, B.S. (WVU), Clinical Instructor.  
 Stephen A. Howard, Ph.D. (U. Mich.), Adjunct Professor of Pharmaceutics.  
 Thurmon Howard, M.S. (Auburn U.), Clinical Instructor.  
 Kevin Hrynski, B.S. (U. Pitt), Clinical Instructor.  
 Arthur I. Jackowitz, Pharm.D. (Phila. C. Pharm.), Professor and Chair of Clinical Pharmacy;  
 Barbara Jackson, B.S. (WVU), Research Instructor.  
 Richard L. Jarvis, B.S. (WVU), Clinical Instructor.  
 Patricia Johnston, B.S. (WVU), Clinical Instructor.  
 Sara D. Jones, B.S. (Ohio St. U.), Clinical Instructor.  
 Steven C. Judy, B.S. (WVU), Clinical Instructor.  
 David M. Kelly, Pharm.D. (Mercer U.), Clinical Assistant Professor.  
 Nahla Khoury, Ph.D. (WVU), Adjunct Assistant Professor of Pharmaceutics.  
 Charles Kibler, B.S. (WVU), Adjunct Instructor in Pharmacy Administration.  
 Lee E. Kirsch, Ph.D. (Ohio St. U.), Adjunct Assistant Professor of Pharmaceutical Chemistry.  
 James E. Krahulec, J.D. (Kent C. Law), Adjunct Instructor in Pharmacy Administration.

Lynn LaCagnin, Ph.D. (WVU), Adjunct Assistant Professor.  
 David Lalka, Ph.D. (SUNY), Professor of Pharmacokinetics; Ass't. Dean , Research , Grad.Prog.  
 Ron Law, B.S. (WVU), Clinical Instructor.  
 Dennis R. Lewis, B.S. (WVU), Clinical Instructor.  
 James Kai-Jin Lim, Ph.D. (U. N.C.), Professor of Pharmaceutics.  
 J. Fred Logan, B.S. (WVU), Clinical Instructor.  
 Anita G. Lorenzo, Pharm.D. (U. Tex.), Clinical Assistant Professor.  
 Robert B. Lowe, Pharm.D. (U. Mich.), Clinical Associate Professor of Clinical Pharmacy.  
 Daniel Lusk, B.S. (WVU), Clinical Instructor.  
 Joseph K. H. Ma, Ph.D. (Duquesne U.), Professor of Pharmaceutical Chemistry.  
 Sundareswaran (Suresh) Madhavan, M.B.A., Ph.D. (Purdue U.), Assistant Professor of Behavioral and Administrative Pharmacy.  
 Eugene H. Makela, Pharm.D. (Med. U.S.C.), Assistant Professor of Clinical Pharmacy.  
 Carl J. Malanga, Ph.D. (Fordham U.), Professor of Biopharmacy; Associate Dean.  
 Mary Lou Malanga, B.S. (Fordham U.), Clinical Assistant Professor.  
 Paul R. Manzuk, B.S. (WVU), Clinical Instructor.  
 Deborah R. Marshall, B.S. (WVU), Clinical Instructor.  
 Robert J. Martin, Jr., B.S. (U. Md.), Clinical Instructor.  
 Joseph C. McGlothlin, B.S. (WVU), Clinical Instructor.  
 Kathy R. McIntire, B.S. (WVU), Clinical Instructor.  
 Daniel J. McKeever, B.S. (WVU), Clinical Instructor.  
 Kathy C. McNeill, B.S. (WVU), Clinical Instructor.  
 Thomas E. Menighan, B.S. (WVU), Clinical Instructor.  
 Ronald W. Meredith, B.S. (WVU), Clinical Instructor.  
 Vernon R. Midcap, B.S. (WVU), Clinical Assistant Professor.  
 David W. Miller, B.S. (WVU), Clinical Instructor.  
 John E. Miller, B.S. (WVU), Clinical Instructor.  
 Kathy Miller, B.S. (WVU), Clinical Instructor.  
 Julie E. Morgan, B.S. (WVU), Clinical Instructor.  
 Kenneth Muha, B.S. (U. Ga.), Clinical Instructor.  
 John Nally, B.S. (WVU), Clinical Instructor.  
 Jay Nematollahi, Ph.D. (U. Calif.), Adjunct Professor of Medicinal Chemistry.  
 Patrick K. Noonan, Ph.D. (U. Calif.—S.F.), Adjunct Assistant Professor of Pharmacokinetics.  
 Gerald W. Nottingham, B.S. (U. Ky.), Clinical Instructor.  
 Frank D. O'Connell, Ph.D. (Purdue U.), Professor Emeritus of Pharmacognosy.  
 John P. O'Donnell, Ph.D. (U. Iowa), Adjunct Professor of Medicinal Chemistry.  
 Thomas J. Olness, B.S. (N.D. St. U.), Clinical Instructor.  
 Don Orlando, B.S. (WVU), Clinical Instructor.  
 Janna G. Ott, B.S. (Purdue U.), Clinical Assistant Professor.  
 Richard Ottmar, B.S. (Idaho St. U.), Clinical Instructor.  
 Ellen S. Ottoway, B.S. (SUNY—Buffalo), Clinical Instructor.  
 Sharon C. Parker, Ph.D. (U. N.C.), Clinical Assistant Professor.  
 Clare A. Parks, Pharm.D. (U. Minn.), Clinical Assistant Professor.  
 Catherine Patriarca, B.S. (WVU), Clinical Instructor.  
 Jan M. Paxton, B.S. (WVU), Clinical Instructor.  
 Robert M. Pedley, B.S. (WVU), Clinical Instructor.  
 Michael F. Perdue, B.S. (WVU), Clinical Instructor.  
 Joseph M. Pietranton, B.S. (WVU), Clinical Instructor.  
 Lori L. Plummer, B.S. (WVU), Clinical Instructor.  
 Charles D. Ponte, Pharm.D. (U. Utah), Professor of Clinical Pharmacy.  
 Terrence S. Prettyman, B.S. (WVU), Clinical Assistant Professor.  
 Jacqueline R. Raymond, B.S. (WVU), Clinical Instructor.  
 Jerry H. Reed, B.S. (U. Tex.), Clinical Instructor.  
 Karen L. Reed, B.S. (WVU), Clinical Instructor.  
 Roger Reed, B.S. (WVU), Clinical Instructor.  
 Larry Rexrode, B.S. (WVU), Clinical Instructor.  
 James H. Reynolds, B.S. (Ohio St. U.), Clinical Instructor.

Daniel M. Rider, B.S. (WVU), Clinical Instructor.  
 W. Clarke Ridgway, B.S. (WVU), Clinical Instructor, Coordinator, Externship Programs.  
 David A. Riley, Ed.D. (U.Ga.), Professor of Behavioral and Administrative Pharmacy; Coordinator of Continuing Education.  
 Dianna L. Ringer, B.S. (WVU), Clinical Instructor.  
 Paul Ritchie, B.S. (WVU), Clinical Instructor.  
 Thomas L. Robinette, B.S. (WVU), Clinical Instructor.  
 Yongyut Rojanasakur, Ph.D. (U. Wisc.), Assistant Professor of Pharmaceutics.  
 Lester J. Rokisky, Jr., B.S. (Duquesne U.), Clinical Instructor.  
 Sidney A. Rosenbluth, Ph.D. (U. Tex.), Professor; Dean.  
 Johnanne Ross, Pharm.D. (U. Tenn.), Clinical Assistant Professor.  
 Mohamadi Sarkar, Ph.D. (MCV), Assistant Professor of Pharmacokinetics.  
 Randolph M. Sarles, B.S. (WVU), Clinical Instructor.  
 Alex Schamroth, Adjunct Instructor in Pharmacy Administration.  
 Nicholas J. Scivo, B.S. (WVU), Clinical Instructor.  
 Frank Sebroski, B.S. (WVU), Clinical Instructor.  
 Ashok C. Shah, Ph.D. (U. Wisc.), Adjunct Professor of Pharmacy.  
 Roger Shallis, B.S. (WVU), Clinical Instructor.  
 A. Ray Shaw, M.S. (WVU), Clinical Instructor.  
 Stephen A. Small, B.S. (WVU), Clinical Instructor.  
 Jeanette C. Smith, B.S. (WVU), Clinical Instructor.  
 Karl W. Sommer, B.S. (WVU), Clinical Instructor.  
 Raymond L. Spassil, M.S. (U.Md.), Clinical Instructor.  
 Everett B. Stanley, B.S. (WVU), Clinical Instructor.  
 James G. Stevenson, Pharm.D. (Wayne St. U.), Clinical Assistant Professor.  
 P. Doug Stone, B.S. (Med. C. Va.), Adjunct Instructor in Pharmacy Administration.  
 Paula Jo Meyer Stout, Ph.D. (WVU), Assistant Professor of Pharmaceutics.  
 Robert B. Stout, B.S. (WVU), Clinical Instructor.  
 S. Renee Straight, B.S. (WVU), Clinical Instructor.  
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 Don Thomas, B.S. (WVU), Clinical Instructor.  
 Jodie Thomas, B.S. (WVU), Clinical Instructor.  
 Nathan H. Thomas, B.S. (WVU), Clinical Instructor.  
 Monica Tonkovich, Pharm.D. (SUNY), Clinical Instructor.  
 Edward A. Toompas, B.S. (WVU), Clinical Instructor.  
 Stephen E. Toompas, B.S. (WVU), Clinical Instructor.  
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WEST VIRGINIA  
UNIVERSITY

# WEST VIRGINIA UNIVERSITY

## Health Sciences Center Catalog



1993-95 Bulletin



# **West Virginia University Health Sciences Center 1993-95 Catalog**

**Basic Sciences  
School of Dentistry  
School of Medicine  
School of Nursing  
School of Pharmacy**

The 1993-95 West Virginia University Health Sciences Center Catalog is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the University of West Virginia Board of Trustees, University administrators, and the faculties of the colleges and schools to meet the goals and objectives of the University. The University, therefore, reserves the right to change, delete, supplement, or otherwise amend at any time, the information, course offerings, requirements, rules, and policies contained herein without prior notice.

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## 1993-94

### WEST VIRGINIA UNIVERSITY CALENDAR

The University calendar includes the academic year, which is composed of two semesters of approximately seventeen weeks each, and two summer sessions of six weeks each.

#### FIRST SEMESTER

Wednesday, Thursday, Friday, August 18, 19, 20 .....	Orientation
Friday, August 20 .....	General Registration
Monday, August 23 .....	First Day of Classes
Monday, August 23 .....	Late Registration Fee in Effect for all Students
Friday, August 27 .....	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
Monday, September 6 .....	Labor Day Recess
Thursday, September 16 .....	Rosh Hashanah (Day of Special Concern)
Saturday, September 25 .....	Yom Kippur (Day of Special Concern)
Friday, October 8 .....	Mid-Semester
Tuesday, October 12 .....	Mid-Semester Reports Due
Friday, October 29 .....	Last Day to Drop a Class
Saturday, Nov. 20 through Sunday, Nov. 28 .....	Thanksgiving Recess
Thursday, December 9 .....	Last Day to Withdraw from University
Friday, December 10 .....	Last Day of Classes
Monday, Dec. 13 through Saturday, Dec. 18 .....	Final Examinations Week
Sunday, Dec. 19 through Wednesday, Jan. 5 .....	Christmas Recess
Wednesday, December 29 .....	Degree-conferring Date (No Ceremonies)

#### SECOND SEMESTER

Wednesday, Thursday, Friday, January 5, 6, 7 .....	Orientation
Friday, January 7 .....	General Registration
Monday, January 10 .....	First Day of Classes
Monday, January 10 .....	Late Registration Fee in Effect for all Students
Friday, January 14 .....	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
Monday, January 17 .....	Martin Luther King, Jr. Birthday Recess
Monday, February 7 (Not a Holiday) .....	West Virginia University Day
Friday, February 25 .....	Mid-Semester
Tuesday, March 1 .....	Mid-Semester Reports Due
Saturday, March 12 through Sunday, March 20 .....	Spring Recess
Friday, March 25 .....	Last Day to Drop a Class
Sunday, March 27 .....	Passover (Day of Special Concern)
Friday, April 1 .....	Friday Before Easter Recess
Thursday, April 28 .....	Last Day to Withdraw from University
Friday, April 29 .....	Last Day of Classes
Monday, May 2 through Saturday, May 7 .....	Final Examinations
Monday, May 9 .....	Grade Reports for all Graduates Due in Dean's Office
Tuesday, May 10 .....	Dean's Reports on Graduates Due in Admissions and Records
Saturday, May 14 .....	Alumni Day
Sunday, May 15 .....	Commencement

## TENTATIVE 1994-95

### WEST VIRGINIA UNIVERSITY CALENDAR

The University calendar includes the academic year, which is composed of two semesters of approximately seventeen weeks each, and two summer sessions of six weeks each. This tentative schedule may be adjusted.

#### *FIRST SEMESTER*

Wednesday, Thursday, Friday, August 17, 18, 19 .....	Orientation
Friday, August 19 .....	General Registration
Monday, August 22 .....	First Day of Classes
Monday, August 22 .....	Late Registration Fee in Effect for all Students
Friday, August 26 .....	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
Monday, September 5 .....	Labor Day Recess
Thursday, September 6 .....	Rosh Hashanah (Day of Special Concern)
Saturday, September 15 .....	Yom Kippur (Day of Special Concern)
Friday, October 7 .....	Mid-Semester
Tuesday, October 11 .....	Mid-Semester Reports Due
Friday, October 28 .....	Last Day to Drop a Class
Tuesday, November 8 .....	Election Day Recess
Saturday, Nov. 19 through Sunday, Nov. 27 .....	Thanksgiving Recess
Thursday, December 8 .....	Last Day to Withdraw from University
Friday, December 9 .....	Last Day of Classes
Monday, Dec. 12 through Saturday, Dec. 17 .....	Final Examinations Week
Sunday, Dec. 18 through Wednesday, Jan. 4 .....	Christmas Recess
Wednesday, December 29 .....	Degree-conferring Date (No Ceremonies)

#### *SECOND SEMESTER*

Wednesday, Thursday, Friday, January 4, 5, 6 .....	Orientation
Friday, January 6 .....	General Registration
Monday, January 9 .....	First Day of Classes
Monday, January 9 .....	Late Registration Fee in Effect for all Students
Friday, January 13 .....	Last Day to Register, Add New Courses, Make Section Changes, Change Pass/Fail and Audit
Monday, January 16 .....	Martin Luther King, Jr. Birthday Recess
Tuesday, February 7 (Not a Holiday) .....	West Virginia University Day
Friday, February 24 .....	Mid-Semester
Tuesday, February 28 .....	Mid-Semester Reports Due
Saturday, March 4 through Sunday, March 12 .....	Spring Recess
Friday, March 24 .....	Last Day to Drop a Class
Friday, April 14 .....	Friday Before Easter Recess
Saturday, April 15 .....	Passover (Day of Special Concern)
Thursday, April 27 .....	Last Day to Withdraw from University
Friday, April 28 .....	Last Day of Classes
Monday, May 1 through Saturday, May 6 .....	Final Examinations
Monday, May 8 .....	Grade Reports for all Graduates Due in Dean's Office
Tuesday, May 9 .....	Dean's Reports on Graduates Due in Admissions and Records
Saturday, May 13 .....	Alumni Day
Sunday, May 14 .....	Commencement

## **Summer Sessions 1994**

### **First Session**

Monday, May 23 .....	Registration, First day of classes
Tuesday, May 24 .....	Late registration for six- week session
Thursday, May 26 .....	Last day to register, add, or change section
Monday, May 30 .....	Memorial Day recess
Monday, June 13 .....	Last day to drop a class
Wednesday, June 29 .....	Last day to withdraw from University
Thursday, June 30 .....	Last day of classes, Final exam

### **Second Session**

Tuesday, July 5 .....	Registration, First Day of Classes
Wednesday, July 6 .....	Late Registration Fee in Effect
Friday, July 8 .....	Last Day to Register, Add, Change Section
Tuesday, July 26 .....	Last Day to Drop a Class
Thursday, August 11 .....	Last Day to Withdraw
Friday, August 12 .....	Last Day of Class; Final Exam
Friday, August 19 .....	Degree Conferring Date (No Ceremonies)

## **Summer Sessions 1995**

### **First Session**

Tuesday, May 23 .....	Registration, First day of classes
Wednesday, May 24 .....	Late registration for six- week session
Friday, May 26 .....	Last day to register, add, or change section
Monday, May 29 .....	Memorial Day recess
Tuesday, June 13 .....	Last day to drop a class
Thursday, June 29 .....	Last day to withdraw from University
Friday, June 30 .....	Last day of classes, Final exam

### **Second Session**

Monday, July 3 .....	Registration, First Day of Classes
Tuesday, July 4 .....	Independence Day Recess
Wednesday, July 5 .....	Late Registration Fee in Effect
Friday, July 7 .....	Last Day to Register, Add, Change Section
Monday, July 24 .....	Last Day to Drop a Class
Wednesday, August 9 .....	Last Day to Withdraw
Thursday, August 10 .....	Last Day of Class; Final Exam
Monday, August 21 .....	Degree Conferring Date (No Ceremonies)

# **West Virginia University Health Sciences Center**

West Virginia University's Schools of Dentistry, Medicine, Nursing, and Pharmacy at the Health Sciences Center offer a comprehensive range of undergraduate, graduate, and professional degrees in health care and bio-sciences.

The 24 degree programs offered by the Health Sciences Center are intended to provide West Virginia with a strong group of professionals prepared to meet the varied health care needs of the state. The more than 10,000 alumni of WVU Health Sciences Center programs include about one-third of the state's practicing physicians, two-thirds of its dentists, three-quarters of its pharmacists, and hundreds of nurses, medical and dental technologists, physical therapists, and other health professionals.

A unique combination of state and federal support, charitable contributions from individuals and foundations, and investment by private corporations has allowed the Health Sciences Center to build an unequalled environment for health education. The Health Sciences Center includes three hospitals, a cancer center, and a medical and dental office building. All were built since 1986 and were designed to meet the needs of patient care, education, and clinical research.

The WVU Health Sciences Center also includes medical divisions in Charleston and Wheeling and relationships with hospitals and physicians in rural areas of the state. These facilities offer students the opportunity to learn their professions in a setting that realistically reflects the conditions they will encounter after graduation.

## **Clinical Education Facilities**

The West Virginia University Health Sciences Center includes a diverse group of health care facilities, providing a training ground for patient care and research for students in the health professions. West Virginia University Hospitals, the Physician Office Center, the Mary Babb Randolph Cancer Center, Chestnut Ridge Psychiatric Hospital, Mountainview Regional Rehabilitation Hospital, and the National Institute of Occupational Safety and Health (NIOSH) are modern facilities that advance medical research and accommodate the demands of contemporary medical, dental, nursing, and pharmacy care.

WVU Hospitals entered a new era in 1988 with the opening of a 376-bed tertiary teaching facility—Ruby Memorial, the primary teaching hospital for the Health Sciences Center. It is equipped and staffed to provide the most comprehensive and advanced care available in West Virginia, thus making it a superb clinical education site for students. Ruby also houses the Jon Michael Moore Trauma Center and WVU Children's Hospital with their specialized care units.

The Physician Office Center, the Health Sciences Center's outpatient facility for education and patient care, accommodates the largest multi-specialty group practice in West Virginia, with 60 primary and specialty care areas. Dental facilities, the Eye Center, and the Outpatient Pharmacy are integral parts of the Physician Office Center.

Chestnut Ridge Hospital is a 70-bed private psychiatric hospital on the Health Sciences Center campus. It is staffed clinically by faculty from the School of Medicine and is the focal point of education in the behavioral and psychiatric sciences.

Mountainview Regional Rehabilitation Hospital provides unique educational opportunities for students in neurological disease, trauma rehabilitation, and physical and occupational therapy.

Many WVU students experience part of their clinical training at the Charleston Division of the Health Sciences Center, which is affiliated with Charleston Area Medical Center. In addition, many WVU students train at off-campus sites where they learn the demands of rural health care first-hand.

## Dental Clinic

The School of Dentistry maintains a dental clinic. The clinic accepts patients who have dental problems of teaching value. Faculty members closely supervise those students assigned to clinic patients. The students get invaluable experience through work at the clinic, and several thousand patients receive a much needed service.

## Admission

To apply for admission to the various schools of the Health Sciences Center, write to the Assistant Director of Admissions and Records, 1170 Health Sciences North, P. O. Box 9815, Morgantown, WV 26506-9815, and ask for the appropriate application forms.

Space at the HSC is limited, and our applications are numerous. Therefore, we give preference in the admissions process to qualified residents of West Virginia. However, we always consider outstanding nonresident applications. We give most careful consideration to those personal qualifications that reflect your fitness for the study and practice of your chosen profession.

Because we are primarily a group of professional schools and most of our applicants are enrolled in undergraduate studies at a residential college or university, we remind you to include your permanent home address with your request for an application form.

Specific entrance requirements for all Health Sciences programs are detailed in the section pertaining to each program. For information about freshman, transfer, and international admission to West Virginia University, please refer to the undergraduate catalog.

**NOTE: During the first semester of your first year at WVU Health Sciences Center, we require that you complete certain prescribed immunization and diagnostic procedures.**

## Application Fees

Application fees for the Schools of Dentistry and of Medicine are \$30.00. Applications fees for all other Health Sciences Center programs are \$10.00. Application fees must accompany your application form.

When you are accepted into one of our programs (except for Medicine or nonresident applicants to the School of Dentistry), you are asked to deposit \$75.00 to make your acceptance official. The deposit for Medicine and for nonresidents in the School of Dentistry is \$100.00. These deposits are applied toward your first semester tuition when you enroll.

If you pay your deposit but do not enroll in the School of Medicine, your deposit is refundable until May 1 of the year you would have enrolled. Deposits for all other programs are not refundable.

## **Second or Multiple Bachelor's Degree**

To earn a second baccalaureate degree, you must earn at least 30 credits beyond the requirements for your first degree. You must satisfy all requirements, departmental or otherwise, for the second degree. You cannot receive a second bachelor's degree if you have not met the University's residence requirement. (See "Residence Requirements.")

If you wish to earn two baccalaureate degrees at the same graduation date, then you must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. You must be admitted to both programs. Furthermore, you must provide the Office of Admissions and Records written proof that you do, in fact, have the approval of both colleges and schools.

## **Academic Forgiveness Policy**

The academic forgiveness policy allows a second chance to the students who were unsuccessful in their initial enrollment in higher education.

If a student has not been enrolled at a West Virginia Board of Trustee institution for at least five calendar years and has not been enrolled in any other institution of higher learning during those five years, then the student may be eligible for admission or readmission to WVU under the academic forgiveness policy. In order to determine your eligibility, you must complete the required form, which is available from the Office of Admissions and Records.

The conditions and rules of the academic forgiveness policy are as follows:

a. Admission to WVU under the academic forgiveness policy is conditional upon satisfying the above stated non-enrollment period. In addition, a recommendation that the student be admitted under the academic forgiveness policy must be submitted by the dean of the college or school that the student plans to enter, and the recommendation must be approved by the Office of the Vice President for Academic Affairs.

b. Upon admission to WVU under this policy, the student will be credited with the hours earned for courses completed with a grade of D or higher.

c. Grades earned during any prior enrollment period will not be counted for purposes of calculating the student's grade-point average, but grades earned will remain on the student's permanent record.

d. The student must meet and complete all course work required to meet the college's or school's requirements for graduation, but under no circumstances after the student has been admitted under the academic forgiveness policy shall the student complete fewer than 64 credit hours prior to earning a degree.

e. A student admitted to WVU under this policy will follow all regulations regarding probation, suspension, and expulsion.

## Health Sciences Programs

Degree Program	Bachelor	Master	Doctorate/ Professional
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### School of Dentistry

Dental Hygiene	B.S.	M.S.	
Dentistry			D.D.S.
Dental Specialties		M.S.	

### School of Medicine

Anatomy		M.S.	Ph. D.
Biochemistry (Medical)		M.S.	Ph. D.
Medical Technology	B.S.	M.S.	
Medicine			M. D.
Microbiology and Immunology		M.S.	Ph. D.
Pharmacology and Toxicology		M.S.	Ph. D.
Physical Therapy	B.S.		
Physiology (Medical)		M.S.	Ph. D.
Public Health*		M.P.H.	

### School of Nursing

Nursing	B.S.N.	M.S.N.	
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### School of Pharmacy

Pharmaceutical Sciences		M.S.	Ph. D.
Pharmacy	B.S. Pharm.		Pharm. D.

### University Hospital

Medical Graduate Residencies			
Radiologic Technology	Certificate		

\*Program approved pending funding authorization via special legislative appropriation.

## Academic Advising

When you enter West Virginia University, you are assigned an academic adviser. Your adviser assists you as you prepare your schedule, assigns classes as required by your degree program, and certifies your study list to the Director of Admissions and Records. Your adviser is also expected to give you advice and sympathetic guidance. You are expected to meet with your adviser to discuss your academic problems.

Students in Human Resources and Education, Social Work, and some students in Arts and Sciences are admitted to pre-programs in particular majors. You remain in a pre-program until you fulfill all requirements for admission to the degree programs.

You may choose to enter other pre-programs. Normally, these programs require you to complete 30-58 credits before you are admitted to a degree program. If you select one of these pre-programs, you are advised through the University Advising Center. The Center provides advising in the following areas: pre-biology, pre-business and economics, pre-BFL (dual degree program in business and foreign languages), pre-chemistry, pre-communication studies, pre-English, pre-foreign languages, pre-geology, pre-history, pre-interdepart-

mental majors, pre-journalism, pre-math, pre-medical technology, pre-nursing, pre-pharmacy, pre-physical therapy, pre-political science, and pre-psychology..

Students who are undecided on a career field may enroll in general studies. If you choose this option, you can explore several career and academic options before you make a final choice. While you explore these different areas, you enroll in courses that fulfill general University requirements for graduation and also provide a solid liberal arts foundation. You can be a general studies student for four semesters or until you are admitted to a degree program. If you select general studies, your adviser will be located in the University Advising Center. The Center staff also advises part-time and special (non-degree) students.

## **Baccalaureate Degrees**

### **Student Responsibility**

As a student, you are responsible for your academic well being. Specifically, you are responsible for knowing your scholastic standing as it relates to the published regulations and standards of West Virginia University. This responsibility includes the regulations of your college or school and the regulations of the department or division in which you are earning a degree.

### **Regulations Affecting Degrees**

All degrees are conferred by the University of West Virginia Board of Trustees as recommended by the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer session in which you complete the requirements for that degree, provided that you have submitted as application for graduation and diploma at your academic dean's office.'

You become eligible to graduate when you complete the requirements of the University and your college or school that were in effect at the time you first registered at that college or school. You have seven years after your first registration to complete the requirements. If you do not, you will have to meet the requirements of a later catalog—one that is no more than seven years old when you complete your studies. With the consent of your adviser and your dean, you may choose to meet the conditions published in a later catalog.

Students must observe any program changes that are enacted by the University of West Virginia Board of Trustees or by local, state, or federal law.

West Virginia University policy dictates that, in view of their professional responsibilities to the general public, the faculty of a professional school may recommend to the president of the University, in writing, that a student be removed from its rolls. The recommendation of the faculty must indicate that the student is not fit to meet the qualifications and responsibilities of the profession.

West Virginia University will not confer a degree nor issue a transcript to any student until payment of all tuition, fees, and other indebtedness to any unit of the University is made.

### **Credits Required**

Each degree program is based upon a combination of required courses and electives. Certain University requirements are listed below. In addition, the various colleges and schools determine their own credit requirements and course grade averages for graduation. Total credits vary from 128 to 145. Required grade averages range from 2.0 to 2.5. The determination to count

ROTC courses as free electives or toward fulfillment of Liberal Studies Program requirements is the prerogative of the dean of the college awarding the degree.

No more than three credit hours of ROTC may count toward fulfillment of the LSP requirement in each cluster area.

## **Liberal Studies Program (LSP)**

The requirements of the LSP apply to all students who entered WVU as freshmen after August 15, 1988 or students transferring to WVU who entered any institution of higher education after August 15, 1988. All other students may choose to fulfill either the requirements of the LSP or of the previous core curriculum.

### **Preface**

West Virginia University believes that its baccalaureate graduates, in addition to developing competence in major and minor fields of study, should be broadly educated. The University's goals are: to prepare its graduates to integrate knowledge from a wide variety of fields; to value the continuing search for breadth of knowledge; to be creative and open to new ideas; and to be able to deal constructively with the technological, cultural, and social changes that challenge us in our own country and the world. In order that West Virginia University graduates may be able to adapt to changing circumstances throughout a lifetime of learning, the Liberal Studies Program (LSP) helps students to learn to acquire knowledge, to make critical judgments in a logical and rational manner, and to communicate their findings clearly. The program encourages students to appreciate the past; to value lasting traditions; to accept their responsibilities as citizens of a free society; to respect the traditions, values and individuality of fellow human beings; to broaden their knowledge about people different from themselves, whether by reason of nationality, age, class, gender, or race; and to understand the basic concepts and principles of mathematics and the sciences.

Therefore, West Virginia University baccalaureate graduates are expected to possess knowledge and experience in three broad clusters of learning: the arts and humanities, the social and behavioral sciences, and mathematics and natural sciences. In the arts and humanities, students come to understand and appreciate the human experience. In the social and behavioral sciences, students develop an awareness of personal, interpersonal, and societal forces that shape individual lives. In mathematics and the natural sciences, students acquire an understanding of the unifying principles and methods of science and their application to natural phenomena. University graduates also are expected to be able to communicate effectively in the written English language and to possess skills in post-high-school mathematics.

### **Program Components**

West Virginia University Liberal Studies Program requirements for all students who receive the baccalaureate degree are divided into a skills component and a distribution component. These are described on the next page.

## **Skills Requirements**

### **Writing:**

- All students must successfully complete English 1 and 2. This requirement is in addition to the Cluster A requirements described in Section B below.
- All students must successfully complete at least one course that requires a substantial writing component and in which the grade is partially determined by writing skills. These courses will be identified in the LSP portion of the *Schedule of Courses* by a "W". The student must complete English 2 before fulfilling the "W" requirement.

### **Mathematics:**

- All students must successfully complete at least three hours of mathematics or statistics. This requirement is in addition to the Cluster C requirement that is described below. Courses approved for the mathematics skills requirement: Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, and 168; Economics 125 and Statistics 101.

## **Distribution Requirements**

The University courses in the LSP that provide students with broad liberal knowledge and experience are grouped into three Clusters:

**Cluster A** (Humanities and Fine Arts): The study of humanities develops knowledge of and appreciation for the accumulated wisdom and experience contained in world literature, history, fine arts, religion, and philosophy, with the objective of bringing the student to an active consciousness of the living, operating, and continuing values of human culture.

**Cluster B** (Social and Behavioral Sciences): The social and behavioral sciences develop in students the knowledge and appreciation of both themselves and the world in which they live. Through the study of anthropology, economics, geography, linguistics, political science, psychology, sociology, and communication studies, students are able to comprehend major concepts, evaluate movements and ideas, and anticipate future trends in societies both at home and abroad.

**Cluster C** (Natural Sciences and Mathematics): Courses in the natural sciences and mathematics provide information about the natural world, and provide a perspective on how an understanding of the natural world is developed. Educated persons should have a knowledge of the physical, chemical, geological, and biological entities and processes that constitute the natural world. Courses in mathematics, statistics, and computer science can provide the technical tools for an understanding of the natural world, as well as an understanding of the methods and value of mathematics considered as a discipline in itself.

## **Distribution of Cluster Requirements**

**Cluster A Requirements:** 12 hours of Cluster A courses must be distributed according to the following provisions and successfully completed:

- Courses must be successfully completed in three disciplines.
- Two courses must be successfully completed in the same discipline.
- If foreign language courses are chosen to fulfill Cluster A requirements, no student may use more than one first semester course of an elementary foreign language. Language courses in a student's native language may not be used to fulfill Cluster A requirements.

- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster A requirements.

**Cluster B Requirements:** 12 hours of Cluster B courses must be successfully completed and distributed according to the following provisions:

- Courses must be successfully completed in three disciplines.
- Two courses must be successfully completed in the same discipline.
- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster B requirements.

**Cluster C Requirements:** 11-12 hours of Cluster C courses must be successfully completed and distributed according to the following provisions:

- Courses must be successfully completed in two disciplines.
- At least one course must include a laboratory (identified in the *Schedule of Courses*).

- No more than one multidisciplinary studies (MDS) course may be used to fulfill Cluster C requirements.

**NOTE: One three-credit-hour course must focus substantially on the study of a foreign or minority culture or cultures or on women and/or issues of gender.**

## Inventory of LSP Courses

The courses listed below in Clusters A, B, and C do not constitute an inclusive listing. The Liberal Studies Committee will be changing the list of courses as evaluations are continually made of courses submitted to the LSP Committee for its approval. Students and advisers should consult the latest *Schedule of Courses* for the most recent inventory of courses included in the Liberal Studies Program. Any course listed at any time during the student's period of study may be counted for Liberal Studies Program credit.

### Cluster A Courses:

Arabic 1, 2, 3, 4.

Art 30, 105, 106.

Chinese 1, 2, 3, 4.

Classics 1, 2, 3, 4, 101, 102.

Communication Studies 21, 187.

English 21, 22, 24, 25, 30, 35, 36, 40, \*80, \*85, 125, 130, 131, 132, 133, 134, 141, 143, 150, 170, 171, 172, 175, 178, 180, 181, \*186, \*188.

Foreign Literature in Translation \*13, \*14, \*15, \*16, \*17, \*18, \*111, \*112, \*121, \*122, \*131, \*132, \*141, \*142, \*151, \*152, \*161, \*162, \*166, \*171, \*181, \*182, \*188, \*189.

French 1, 2, 3, 4, 10, 11.

German 1, 2, 3, 4, 10, 11.

History 1, 2, \*5, \*6, 11, 12, 52, 53, 100, 101, 103, 105, 107, 109, \*117, \*118, 119, 120, \*121, 122, 155, 156, 157, 159, 161, 177.

Humanities 1, 2, 3, 4, \*5, 10, 11.

Italian 1, 2, 3, 4.

Japanese 1, 2, 3, 4.

Landscape Architecture 112.

Linguistics 3.

Multidisciplinary Studies \*40, 91, \*100.

Music 30, 33, 34, 129, 136, 137, 138.

Philosophy 1, 2, 3, 4, 10, 13, 15, 20, 103, 105, 106, 108, 111, \*113, 120, 121, \*122, 123, \*125, 150, 158, 159, 161/ MATH 161, 166, 171, 172, 187.

Portuguese 1, 2, 3, 4.

Religious Studies 5, 100, 101, 102, 103, 104, 105, 110, 111, 112, 120, 121, 128, \*130, \*131, \*132, 142, 150.

Russian 1, 2, 3, 4.

Spanish 1, 2, 3, 4, 10, 11.

Theatre 30, 50, 74.

Women's Studies \*40.

### **Cluster B Courses:**

Agricultural Education 162.

Child Development and Family Studies 10.

Communication Studies 11, 12, 14, 80, 106, 109, \*134, \*135, 140, 180.

Economics 51, 54, 55.

Forestry 140.

Geography 1, \*2, 8, 105, 109, 110, 140, 141, \*143, \*144, 145.

History \*4, \*141, \*142.

Journalism 1.

Linguistics 1.

Mineral and Energy Resources 97.

Multidisciplinary Studies 2, \*40, 50, \*60, 70, 90, 92 \*100.

Political Science 1, 2, 3, 7, 110, 120, \*137, \*150, 160, 170, 171.

Psychology 1, 141, 151, \*170.

Recreation and Parks 43.

Resource Management 1.

Social Work \*47.

Sociology & Anthropology 1, \*5, 7, \*51, 121, 122, 123, 125, 131, 132, \*135, 136, 137, \*138, 140, \*145, 152, \*155, \*156, 157, 158, 159, \*160, 162.

Women's Studies \*40, \*145.

### **Cluster C Courses:**

Astronomy 106.

Biology 1, 2, †3, †4.

Chemistry †11, †12, †15, †16, †17, †18.

Computer Science 1, 5.

Economics 125.

Environmental Microbiology 141.

Geography 7, 107.

Geology 1, †2, 3, †4, †6, 7.

Human Nutrition and Foods 71.

Mathematics 3, 4, 11, 14, 15, 16, 23, 28, 128, 131, 168.

Multidisciplinary Studies 2, \*60, 70, 90, 91.

Philosophy 11.

Physical Science †11, †12.

Physics †1, †2, 7, 8, †11.

Statistics 101

\*Satisfies the foreign culture, minority, or gender studies requirement.

†Satisfies the laboratory course requirement.

## Approved 200-Level Courses

No 200-level courses are included in Clusters A, B, and C because they are deemed to be not ordinarily appropriate for the Liberal Studies Program. However, a student may receive approval from his/her adviser to take a 200-level course from the list of approved courses indicated below, in fulfillment of the LSP requirement for each of the three cluster areas.

### Cluster A Courses:

Communication Studies 230.

English 211, 220, 235, 236, 240, 250, 255, 256, 261-268, \*288.

History 200, 204, 205, 206, 207, 208, 214, \*225, \*226, 231, 232, \*245, \*246, \*251, \*252, 253, 259.

### Cluster B Courses:

Communication Studies 221.

Economics 211.

Health Education \*290.

History 208, 211, \*227, \*229, \*230, 259.

Political Science \*235, \*250, \*251, \*254, \*255, \*256, \*258.

Social Work \*247.

Technology Education \*245.

\*Satisfies the foreign culture, minority, or gender studies requirement.

## Residence Requirements

If you decide to transfer to WVU from another institution of higher learning, then you should transfer no later than the start of your third year. Under no circumstances will a student who enters WVU after October 1 in any year be allowed to receive a degree at the next commencement.

In some special cases, you can leave WVU at the end of your third year, and still receive your degree from WVU. You must enter another accredited institution with the purpose of taking a combined program that will lead to two degrees or prepare for graduate study. Before you leave, you must apply to the Academic Standards Committee of your college to request permission to do the work of the fourth year, or a part thereof, at the other institution but still receive the degree from WVU. You will receive your degree when you present the proper records from the other school.

If you are a transfer student who has completed all of your undergraduate work in another school in the West Virginia system of higher education, then you must complete either your last 30 hours of work at WVU or at least 36 hours of work at WVU of which 16 of the last 32 hours must be on campus. If you are a transfer student whose undergraduate work has been completed outside the West Virginia system of higher education, then you must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. You may be required to earn up to 15 hours in your major field regardless of the number of hours or the nature of the courses transferred.

## Work Done Out of Residence

It is WVU's policy to discourage taking regular residence courses in absentia. If you begin a course at WVU but fail to complete it due to illness or some other acceptable reason, you may receive permission to complete the work in absentia. The permission must be granted by the Academic Standards

Committee of the college or school concerned, and the work must be done under the guidance of a WVU professor. Credit for the course in such cases is allowed only upon a report of a grade of C or better on the final examination. This regulation does not apply to WVU off-campus courses.

If you fail a course (receive a final grade of F) taken at WVU, you must repeat the course at WVU to receive credit for that course. The dean of the college or school in which you are enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in your folder authorizing the exception and explaining its basis.

You should be aware of the requirements for residence and your specific degree requirements described in the catalog when transferring credit from other institutions. If you are transferring credit from institutions outside the West Virginia state system of higher education, WVU will accept credit only for **courses** in which you earned a grade of C or higher provided other conditions above have been met. Under no circumstances will **grades** be transferred from institutions outside the state system.

## **WVU Transient Students**

If you decide to take a course or courses at another school, you must have written approval from your adviser, your dean, and the Director of Admissions and Records or his designee. To receive such approval, you must have an overall 2.0 average. All approved college-level work is accepted for transfer from accredited institutions, provided the above requirements have been met and you have an overall grade-point average of 2.0. If you have less than a 2.0 average, you can transfer courses after you obtain an overall 2.0 at WVU. Only courses with grades of C or higher are accepted from institutions not in the state system. All grades are transferable from the schools in the state system.

If you fail a course at WVU, you may not repeat this course at another institution and transfer the credit to WVU unless you have the approval of the dean of the college or school in which you are enrolled.

## **Substitution for Required Courses**

You may want to substitute one course for another that is in your curriculum or may be required for your degree. In order to do this, you must get written permission from the Academic Standards Committee of your college or school.

## **Credit Examinations**

### **Advanced Placement Program (AP)**

West Virginia University encourages you to work to your full capacity and to earn your degree at your own learning speed. As a high school junior or senior, you can enter the University early, as previously explained, or you can take college-level courses at your school in conjunction with the College Entrance Examination Board (CEEB). The Advanced Placement Service administers three-hour examinations to show competence equal to that received by taking the actual college course. The chart on page 31 shows the subject areas, the necessary test scores, and the WVU equivalent courses.

### **College Level Examination Program (CLEP)**

If you apply for admission to WVU and you have gained a significant level of maturity through your life experiences, you may gain college credit for these

educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. A policy of the University of West Virginia Board of Trustees allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition and freshman English. Up to 34 hours of general education credit may be earned for successful performance on the CLEP General Examinations. Although this program was designed primarily for adults, exceptionally well qualified high school seniors may use the CLEP Program. If you are interested, write to the Director of Admissions and Records for additional information. The table on page 28 indicates the areas in which WVU grants credit based on the minimum score required. It should be noted that no one is eligible for CLEP credits after he/she has enrolled at WVU.

If you are a veteran, you may receive advanced placement for specific military experience. Veterans should contact the Director of Admissions and Records for specific information.

### **Credit by Examination**

If you are currently enrolled, you may receive credit for a course or courses if you can demonstrate competency in the course content. The department offering the course determines evaluation standards for the student's competency. If skill and cognitive abilities are components of the course, then both are evaluated. Credit is given only when a satisfactory degree of competency is shown.

A college, school, or department may ask you to prepare a self-evaluation statement. The purpose of the statement is to determine the competency you believe you have and the methods by which you achieved it. If you are interested in credit by examination, contact the dean in the college or school offering the course. The details and procedures will be explained to you at that time.

Tables providing examination equivalencies are on the following two pages.

### **Credit for Correspondence Work**

You may receive credit for correspondence work in non-laboratory courses. You have to meet certain conditions that govern this credit:

- A maximum of 30 hours is acceptable.
- The work must be from accredited institutions.
- The institution must accept the credit toward its own degrees.
- WVU must ordinarily accept that institution's residence work.

### **Graduate Credit Via Senior Petition**

You may begin graduate study early through the University's senior petition policy. Come to the Office of Admissions and Records and ask for the senior petition form. You must have it signed by your adviser and the dean of the college granting your degree and the dean of the college of your intended graduate degree (if different). The University has certain policies for you to follow in order to enroll in a graduate course for graduate credit. The policies are:

- Senior petition applies only to courses numbered 200-399. You must be within 12 hours of receiving your bachelor's degree, and your grade-point average must be at least 3.0 on a 4.0 scale.
- You can receive only 12 graduate hours through the senior petition.
- You must have the proper signatures on your senior petition by the time you enroll in the petitioned courses.

## Advanced Placement Program

Subject	Test Score	WVU Equivalent
<b>ART:</b>		
Art History .....	3	To be determined by Division of Art
<b>BIOLOGY .....</b>	<b>3</b>	<b>BIOL 1 and 3 (4 hr.)</b>
		<b>BIOL 2 and 4 (4 hr.)</b>
<b>BIOLOGY .....</b>	<b>4</b>	<b>BIOL 15 (4 hr.)</b>
<b>CHEMISTRY .....</b>	<b>3</b>	<b>CHEM 15 and 16 (8 hr.)</b>
<b>COMPUTER SCIENCE .....</b>	<b>3</b>	<b>Non-specific CS 3 hr. (Test A)</b>
		<b>Non-specific CS 6 hr. (Test AB)</b>
<b>ECONOMICS:</b>		
ECON Microeconomics .....	3	ECON 54 (3 hr.)
ECON Macroeconomics .....	3	ECON 55 (3 hr.)
<b>ENGLISH:</b>		
English Lang. & Comp. ....	3	ENGL 1 (3 hr.)
English Lang. & Comp. ....	4 or 5	ENGL 1 and 2 (6 hr.)
Lit. & Comp. ....	3	ENGL 35 (3 hr.)
Lit. & Comp. ....	4 or 5	ENGL 35 and 36 (6 hr.)
<b>FOREIGN LANGUAGES:</b>		
French Language .....	3	FRCH 103 and 104 (6 hr.)
French Literature .....	3	FRCH 191 (3 hr.)
German Language .....	3	GER 103 and 104 (6 hr.)
Latin-Vergil .....	3	CLAS 191A (3 hr.)
Latin-Catullus-Horace .....	3	CLAS 191B (3 hr.)
Spanish Language .....	3	SPAN 103 and 104 (6 hr.)
Spanish Lit. ....	3	SPAN 191 (3 hr.)
<b>HISTORY:</b>		
European .....	3	HIST 2 (3 hr.)
American .....	3	HIST 52 and 53 (6 hr.)
<b>MATHEMATICS:</b>		
MATH Test AB .....	3	MATH 14 (4 hr.)
MATH Test AB .....	4 or 5	MATH 15 (4 hr.)
MATH Test BC .....	3	MATH 15 (4 hr.)
MATH Test BC .....	4 or 5	MATH 15 and 16 (8 hr.)
<b>MUSIC .....</b>	<b>3</b>	<b>To be determined by Division of Music</b>
<b>*PHYSICS:</b>		
PHYS Test B .....	3	PHYS 1 (4 hr.)
PHYS Test B .....	4 or 5	PHYS 1 and 2 (8 hr.)
PHYS Test C .....	3	PHYS 11 (4 hr.)
PHYS Test C .....	4 or 5	PHYS 11 and 12 (8 hr.)
<b>POLITICAL SCIENCE:</b>		
American Government .....	3	POLS 2 (3 hr.)
Comparative Government .....	3	POLS 1 (3 hr.)

**\*NOTE:** Students receiving AP credit for any physics course will have to register for and complete the corresponding physics labs by special arrangement with the Department of Physics.

## College Level Examination Program (CLEP)

General Examinations	WVU Equivalent	Minimum Score Required
English Composition (with essay)	ENGL 1 (3 hr.)	590
English Composition (multiple choice)	No credit	
Humanities	Untranslated LSP A (6 hr.)	500
Mathematics	Untranslated LSP C (4 hr.)	500
Natural Science	Untranslated LSP C (6 hr.)	500
Social Science & History	Untranslated LSP B (6 hr.)	500
<b>Subject Tests:</b>		
American Literature	ENGL 24 (3 hr.)	59
Analysis & Interpret. of Literature	ENGL 35 (3 hr.)	59
College Composition	No credit	
English Literature	ENGL 22 (3 hr.)	60
Freshman English	No credit	
College French (levels 1 and 2)	FRCH 1 and 2 (6 hr.)	44
	FRCH 3 and 4 (6 hr.)	55
College German (levels 1 and 2)	GER 1 and 2 (6 hr.)	43
	GER 3 and 4 (6 hr.)	54
College Spanish (levels 1 and 2)	SPAN 1 and 2 (6 hr.)	45
	SPAN 3 and 4 (6 hr.)	54
American Government	POLS 2 (3 hr.)	50
American History I	HIST 52 (3 hr.)	49
American History II	HIST 53 (3 hr.)	49
Western Civilization I	HIST 1 (3 hr.)	50
Western Civilization II	HIST 2 (3 hr.)	50
Educational Psychology	EDP103 (3 hr.)	49
General Psychology	PSYC 1 (3 hr.)	50
Human Growth and Development	CDFS 10 (3 hr.)	51
Intro. Macroeconomics	ECON 55 (3 hr.)	50
Intro. Microeconomics	ECON 54 (3 hr.)	50
Intro. Sociology	SOCA 1 (3 hr.)	50
College Algebra	MATH 3 (3 hr.)	48
Trigonometry	MATH 4 (3 hr.)	54
College Algebra/Trig.	MATH 14 (4 hr.)	50
Calculus with Elementary Functions	MATH 15 (4 hr.)	49
General Biology	BIOL 1 and 2 (6 hr.)	49
	(no credit for the labs)	
General Chemistry	CHEM 15 (4 hr.)	50
Computers and Data Processing	C S 1 (4 hr.)	49
Intro. to Management	MANG 105 (3 hr.)	50
Intro. Accounting	ACCT 51 and 52 (6 hr.)	54
Intro. Business Law B.	BLAW 111 (3 hr.)	51
Intro. Marketing	MKTG 111 (3 hr.)	50

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that you receive graduate credit for these courses on your permanent record. The dean of the college or school in which you are taking graduate courses must approve any exceptions to the policy.

**Note: If you receive graduate credit for a course, the credit for that course does not count for your undergraduate degree.**

## Visitors

Full-time University students may attend classes as visitors. To visit a class, you must have permission in writing from your adviser and the instructor of the course. A member of the administration, teaching staff, or other regular University employees may also attend classes as visitors. These individuals also must have the written permission from their department and the instructor of the class. As a visitor, you do not receive credit for that class. You may not apply for a credit by exam in a class in which you were a visitor.

## Auditors

You may register for courses as an auditor and pay full fees for the course. In this situation, you do not receive credit for the course. If you audit a course in one semester, you must let one semester pass before you enroll in the course for credit. You may change your status from audit to grade or grade to audit only during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The instructor may direct the Office of Admissions and Records to remove an auditor from a class list or grade report if attendance requirements are not met.

## Summer Sessions

WVU has two six-week sessions. Summer Session One begins in the middle of May and ends on June 30. Summer Session Two begins on July 1 and ends the second week of August. Requirements for admission and work performance for the summer sessions are the same as for the regular semesters.

You may earn credit toward a baccalaureate, master's, doctoral, or professional degree in the summer sessions. Summer offerings vary from year to year. For complete information concerning course offerings during the summer sessions, consult the Summer Session Schedule of Courses.

## Evening Classes

If you are unable to attend classes during the day, the University offers evening courses taught by regular faculty. These courses carry full college credit and are offered at both the undergraduate and graduate levels.

## Classification of Students

WVU undergraduates are classified as freshmen, sophomores, juniors, or seniors. These classifications are based upon the number of hours completed. The classifications are as follows:

Freshman classification	1-28 hours, inclusive
Sophomore classification	29-58 hours, inclusive
Junior classification	59-88 hours, inclusive
Senior classification	89 or more semester hours

## Grade-Point Average

All academic units of the University require minimum standards of scholastic quality. Your grade-point average is computed on grades earned in courses taken at WVU and institutions in the WV system of higher education only. To be eligible to receive a baccalaureate degree, you must have a grade-point average of at least 2.0 at the time of graduation. Some degree programs require a higher grade-point average overall or in the major courses. Your grade-point average is based on all work for which you received letter grades other than W, WU, and P. See "D/F Repeat Policy".

You must make certain that you know your grade-point standing. You can obtain the necessary information concerning your grade-point standing from the dean of your college or school. To determine your grade-point average, use the method described in the section on grade points.

## Graduation with Honors

WVU recognizes distinguished academic achievement by awarding degrees *cum laude*, *magna cum laude*, and *summa cum laude*. This distinction can be awarded on the initial or second baccalaureate degrees. All candidates for a baccalaureate degree with a grade-point average of 3.8 or higher graduate *summa cum laude*. Those with a grade-point average of less than 3.8 but equal to or above 3.6, graduate *magna cum laude*. Those with a grade-point average of less than 3.6 but equal to or above 3.4, graduate *cum laude*.

Your grade-point average for honors consideration is based on baccalaureate-level college work attempted through the next to the last semester or through the last semester, whichever GPA is higher. This calculation includes transferrable baccalaureate-level college work attempted at all regionally accredited higher education institutions you have attended. Credit hours earned with a grade of P or S are not considered in the determination. Additionally, your GPA on WVU work must meet the requirements stated for the level of honors to be designated. If your GPA on WVU work indicates a lower level of honors, then the WVU GPA shall govern the specific designation.

Students entering and completing a second baccalaureate degree program following completion of the initial degree at the University are eligible to receive the honors designation. Grade point averages for graduation with honors on second baccalaureate degrees shall be computed on the last 80 semester hours of baccalaureate-level work excluding the credit earned with a P or S. At least 30 semester hours must have been completed in the second degree program through the penultimate semester.

A request for an exception to this policy may be made to your college/school dean. After review, the dean will forward all requests for exceptions of this policy to the Provost for the final decision.

This policy will be in effect for all students whose first enrollment at WVU is on or after August 15, 1992.

## Academic Progress

### Courses

As a general rule, most courses taught at WVU extend for one semester, although some extend for two semesters. Credit is not awarded for a course if you do not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant an exception. Grades reported at the end of the first semester in a two-semester course are merely an indication of the quality of the student's work to that point. Credit is not given for that part of the course completed. Courses taught in the summer sessions carry the same credit value as fall and spring semester courses.

### Evaluation of Student Progress

Your progress is evaluated by a variety of methods. The measurement and evaluation of learning are consistent with the objectives of the course and provide the opportunity for you and your instructor to evaluate your progress. The University discourages evaluation by final examination only. You are responsible for all materials presented or assigned in scheduled instructional sections. If you do not complete all assigned work, you may earn an incomplete (I) or a failing grade (F).

The last week of each semester of the academic year is designated finals week. Final examinations for the summer sessions are given on the last day of classes. The *Schedule of Courses* gives the date and times for final examinations.

Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week. Evening classes have their final exams the last meeting of the class preceding finals week.

If you take a section of a multi-section course, you may be required to take the departmental final examination, given during the regular final examination period.

### Grading System

- A—excellent (given only to students of superior ability and attainment)
- B—good (given only to students who are well above average, but not in the highest group)
- C—fair (average for undergraduate students)
- D—poor but passing (cannot be counted for graduate credit)
- F—failure
- I—incomplete
- W—withdrawal from a course before the date specified in the University Calendar
- WU—withdrawal from the University doing unsatisfactory work
- P—pass (see Pass-Fail Grading below)
- X—auditor, no grade and no credit
- CR—credit but no grade
- PR—progress. Final grade at end of the second semester (HSC)
- S—satisfactory
- U—unsatisfactory (equivalent to F)
- \*F—unforgivable F, not eligible for D/F repeat policy

## Pass-Fail Grading

Pass-fail grading encourages you to take elective courses not related to your degree concentration. Pass-fail grading also facilitates grading in competency-based courses which may be an integral part of your program.

**Student Option.** Any full-time student who has completed 15 hours or more and who has maintained a 2.0 grade-point average may take a maximum of four hours each semester or summer session on a pass-fail basis. Any course taken on a pass-fail basis must be a free elective. You are limited to a total of 18 hours of pass-fail credit in your collegiate career. Unless otherwise indicated, courses in your major, courses in other subjects that are required by the major, and courses taken to satisfy University, college, school, or departmental requirements are excluded from pass-fail. For example, courses elected to satisfy the English, Liberal Studies Program (LSP), or foreign language requirements may not be taken for pass-fail grading.

If you elect a course on a pass-fail basis, you are graded as a regular student. The instructor turns in the appropriate letter grade to the Office of Admissions and Records. This letter grade is then converted to a P on the basis of A, B, C, or D for a pass and F for a fail. The grade of P does not affect your grade-point average. However, any F grade affects your grade-point average whether it is a regular grade or a pass-fail grade.

You choose the option of pass-fail grading for a course during the registration period. Once the registration period has ended, you may not change the grade status in the course.

**College or School Option.** A department or unit may designate any performance- or competency-based course as exclusively pass-fail. To institute this, the college or school must have the approval of the Faculty Senate. Courses offered only as pass-fail are not included in the maximum of 18 hours that may be freely elected under the student option.

## Grade Points

Each letter grade has a numeric value. Grade points are based on this number value and the credit-hour value of the course. The numeric value of letter grades are as follows:

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade-point average is computed on all work for which you registered, with the following exceptions:

- Courses with a grade of W, WU, P, S, and X carry no grade value. The grade of incomplete (I) initially carries no grade value.

- The grade of I is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. To remove the grade of I, you do not register for the course again; instead, you arrange to submit incomplete or supplemental work to the original instructor of the course. When you receive the grade of I and later remove the incomplete grade, the grade-point average is calculated on the basis of the new grade. If you do not remove the I grade within the next semester in which you are enrolled, the grade of I is treated as an F (Failure). The Academic Standards Committee of the appropriate college or school may allow you to postpone removal of the I grade if you can justify a delay.

•If you are working toward teacher certification, you are responsible for every registration in a course in which the grade of A, B, C, D, F, WU, P, X, or I is received.

**GPA Calculations**

Students like to know how to calculate their overall and semester grade-point averages. The following example shows how to do it. Assume you are registered for 16 hours and receive the following grades in these courses:

English 1	B	Mathematics 3	A
Geology 1	C	Political Science 1	B
Spanish 1	D	Orientation 1	P

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Course	Credit	Grade	Grade Value	Credit X Grade Value	Grade-Points
English 1	3	B	3	3 X 3	= 9
Geology 1	3	C	2	3 X 2	= 6
Spanish 1	3	D	1	3 X 1	= 3
Mathematics 3	3	A	4	3 X 4	= 12
Political Science 1	3	B	3	3 X 3	= 9
Orientation 1	1	P	0	1 X 0	= 0

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- 1. Multiply the credit by the grade value to get the grade points earned for each course.
- 2. Add the Total Grade Points, in this case, 39.
- 3. Divide the Total Grade Points by the total credit hours with a grade value.

Remember that P grades have no grade value, so in this case, there are 15 credit hours for the GPA calculation. 39 divided by 15 = grade-point average of 2.6.

**D/F Repeat Policy**

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate degree. If you earn a D or F in a course at WVU taken no later than the semester or summer session registration when you reach a cumulative total of 60 hours attempted, you are eligible to D/F repeat that course by meeting with your academic adviser sometime during the semester in which you are repeating the course and filling out the appropriate forms. You must repeat the course at WVU. You will have only one opportunity to improve your original grade. The new grade becomes the grade that counts, even if your performance is worse than when you were originally graded.

- When you have D/F repeated a course, the following happens:
- 1. The original grade is disregarded for the purpose of determining your grade-point average, hours passed, and hours attempted.
  - 2. The original grade is not deleted from your permanent record.
  - 3. The second grade is entered on your transcript and marked repeat in the semester that you repeated the course.
  - 4. You can exercise your right under the D/F repeat policy at any time before you receive your initial baccalaureate degree. If you get a grade of F in a course for disciplinary reasons or for cheating, the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on your permanent record by an \*F and is calculated in your grade-point average.

## **Grade Reports**

During the seventh week of classes in the fall and spring semesters, instructors submit a report of all undergraduate students earning grades of D or F. These grades are used for counseling and are not recorded on the student's official permanent record. These reports are sent first to the Office of Admissions and Records and then to the student, the student's adviser, and the dean of the college or school in which the student is enrolled.

Final grades are reported within 48 hours after the end of the final examination. The instructor submits the grade reports to the Office of Admissions and Records. The final grades of all seniors provisionally approved for graduation at the close of each semester or summer session are reported to the deans of their colleges or schools. Special report forms for this purpose are supplied by the student's dean.

At the end of each semester or at the close of each summer session, a report of each student's work is prepared for that period and sent to the student.

## **Transcripts of Academic Records**

Each copy of an official transcript costs three dollars, payable in cash or money order. You may request, in person, an on-the-spot transcript at a cost of five dollars. Priority service is not available at all times. Because of demand, it may take two to three weeks to process an application for a regular transcript at the close of a semester or summer session. At other times, it is the policy of WVU to process all regular transcript requests within 48 hours of receipt of the request.

If you owe money or have some other financial obligation to any unit of the University, you forfeit your right to claim a transcript of your record until you meet your obligation. Additionally, you also forfeit the right to claim your diploma until these financial obligations have been met.

When you apply for a transcript, you must furnish your last date of attendance and your student number. Be sure to indicate the full name under which you were enrolled. Requests for transcripts must be made in writing to the Office of Admissions and Records. We cannot accept telephone requests because of the risk of the security of your record.

## **Final Grade Appeals**

Students have the right to appeal final course grades which they believe reflect a capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, sex, age, handicap, veteran status, religion or creed, sexual orientation, color, or national origin. The grade appealed shall remain in effect until the appeal procedure is completed or the problem resolved. The primary intent of this procedure is to provide a mechanism whereby a student might appeal a failing grade or a grade low enough to cause the student to be eliminated from some program or to require the repetition of a course. Grade appeals that do not meet this classification are not precluded.

**Step 1.** The student shall discuss the complaint with the instructor involved prior to the midsemester of the succeeding regular semester, whether the student is enrolled or not. If the two parties are unable to resolve the matter satisfactorily, or if the instructor is not available, or if the nature of the complaint makes discussion with the instructor inappropriate, the student shall notify the chairperson of the instructor's department or division (or, if none, the dean). The chairperson or dean shall assume the role of an informal facilitator and assist in resolution attempts. If the problem is not resolved within 15 calendar days from

when the complaint is first lodged, the student may proceed directly to Step 2.

**Step 2.** The student must prepare and sign a document which states the facts constituting the basis for the appeal within 30 calendar days from when the original complaint was lodged. Copies of this document shall be given to the instructor and to the instructor's chairperson (or, if none, to the dean). If, within 15 calendar days of receipt of the student's signed document, the chairperson does not resolve the problem to the satisfaction of the student, the student will forward the complaint to the instructor's dean (see Step 3).

**Step 3.** Within 15 calendar days of receipt of the complaint, the instructor's dean shall make a determination regarding the grade, making any recommendation for a grade change to the instructor involved. If the instructor involved does not act on the dean's recommendation, or if the student is in disagreement with the decision of the dean, the dean will refer the case to a representative committee, appointed by the dean, for final resolution. This committee shall consist of three or more faculty members, including at least one person outside the instructor's discipline.

1. Upon receiving an appeal, the committee will notify in writing the faculty member involved of the grade challenge, which shall include a statement of the facts and evidence to be presented by the student.

2. The committee shall provide to the faculty member involved and the student making the appeal written notification of their right to appear at a hearing to be held before the department or college or school representative committee, together with the notice of the date, time, and place of the hearing.

3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.

4. The final decision of this committee shall be forwarded to the instructor and to the dean involved. If the decision requires a change of grade, the instructor shall take action in accordance with the committee's decision.

5. If the instructor does not act within five days, the dean shall make any necessary grade adjustment.

6. In the case of grade appeals, the dean functions as the President's designee; therefore, implementation of this decision shall end the appeal procedure.

## **Absences**

If you are absent from class for any reason, you are responsible for all work that you missed. Absences may jeopardize your grade(s) in that class or possibly the ability to continue in that course. Instructors are responsible for keeping an accurate record of students enrolled in their classes and their attendance. If an instructor uses attendance records in determining the final grade in a course, then this fact must be announced to the students in writing within the first five class meetings.

## **Absence from Examinations**

You are required to take all regular examinations in a course. If you attend a course all semester but you do not take the final examination and you do not have the instructor's permission to miss it, the instructor may give you a grade of zero for the examination and report a grade of F for the course. If, however, the instructor believes your absence was necessary, he/she has the option to report a grade of incomplete (I).

If your absence from a regularly scheduled examination was due to illness, an authorized University activity, or another reason approved by your dean, you have the opportunity to make up the examination.

## **Withdrawals From Individual Classes**

**Deadlines:** Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines are published in the University *Schedule of Courses* each semester. If you follow all established University procedures and withdraw before the published deadline, you will receive a W on your transcript. Grade-point averages are not affected in any way by this mark.

### **Procedures:**

1. Before withdrawing from individual classes, consult your adviser to determine:
  - Whether your course load would be reduced below the minimal requirements set by your college or school. If so, you must get permission from the Committee on Academic Standards of your college or school before you submit the course adjustment form.
  - Whether your course load would be reduced below the minimal number of hours required to qualify for financial aid, varsity athletic competition, or international full-time student status;
  - Whether the courses to be dropped are required to fulfill academic probationary conditions;
  - Whether the courses from which you want to withdraw might be corequisite with other courses you are taking, or prerequisite to other courses required for the next term.
2. Ask your adviser to sign the University course adjustment forms and then submit the forms to the Office of Admissions and Records.

## **Withdrawal From the University**

**Deadlines:** You may withdraw from the University any time before the last day of a semester or session on which regular classes are scheduled to meet. If you withdraw before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) you receive grades of W in all of your courses for that semester or session. After these deadlines, you will receive grades of W in those courses in which you made satisfactory progress and grades of WU for courses in which your progress had been unsatisfactory.

**Procedures:** 1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all financial obligations and for following established procedures. This includes the completion of forms and the delivery of the completed forms to appropriate officials. Students not fulfilling their financial obligations may have difficulty withdrawing from the University. A withdrawal becomes official only after the forms have been recorded by the Director of Admissions and Records.

2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons still must send notification of their intention to withdraw to the Office of Student Life. The notice should be verified in writing and the student ID and PRT cards enclosed.

3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Student Affairs office (or dean's office of an off-campus instructional unit). Withdrawal procedure is explained at that time. Identification (ID) and PRT cards must be presented.

4. With the help of their academic advisers, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

### **Academic Leave of Absence**

WVU offers undergraduate students in good standing, as defined by WVU's uniform suspension policy and not subject to disciplinary action, the opportunity to request an academic leave of absence. The academic leave of absence is designed for the student who wishes to be away from his/her academic endeavors at WVU for one or more semesters, but intends to return at a later date. Leave of absence status must be requested before the beginning of the semester for which the leave is desired. The academic records of students on an academic leave of absence remain in an active status. While on an academic leave of absence, the student retains the right to use certain campus facilities such as the Reading Lab, Writing Lab, Math Lab, Student Counseling Service, and Career Services. When a student decides to return to WVU after his/her academic leave of absence, application fees are waived. If a student attends any institutions of higher education while on leave of absence, s/he must obtain an overall average of 2.0 on all work attempted in order to be eligible to return. An overall grade point average of 2.0 on all work attempted while on leave combined with the WVU grade point average is also acceptable. While on an academic leave of absence, the student receives communications from WVU. Academic advisers and the Office of Admissions and Records can provide additional details about an academic leave and eligibility requirements.

### **Re-Enrollment After Withdrawal**

After you withdraw from WVU in two consecutive semesters (excluding summer sessions), you may not register for further work without approval of the dean of the college or school in which you want to register and subject to conditions set by that dean.

### **Committee on Academic Standards**

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration. All orders of the committee shall become effective when approved by the dean of the college or school. In exercising its authority, the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

**Probation, Suspension, Readmission, Expulsion Policy**  
**Uniform Probation**

Students with a cumulative grade-point average below 2.0 are notified on semester grade reports that their academic performance is unsatisfactory. Such students may be subject to probation by the dean of their college or school. A unit may require a grade-point average above 2.0 or other academic requirements for purposes of determining probation or meeting degree requirements. Students have the right to have the sanction of academic probation reviewed and explained by the academic official who imposed the sanction. Academic probation is not recorded on a student's permanent record and essentially constitutes a warning to the student of standards which must be met.

**Maximum Allowable Grade-Point Deficiency\***

<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>	<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	6
50-54	13		

**Uniform Academic Suspension Regulations**

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension at any time. Normally, students are suspended at the end of a semester or summer school session. Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester but will not exceed one calendar year from the date of a student's first suspension. A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at West Virginia University upon readmission to the University. Students are not eligible for readmission if they earn less than a 2.0 at other institutions while on suspension from WVU.

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education, excluding grades of P and exclusive of the D/F Repeat Policy.

After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met. A student who has preregistered and is subsequently suspended shall have his/her registration automatically cancelled.

## **Reinstatement After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for reinstatement. The college or school petitioned shall establish the terms of reinstatement for successful student petitions. After one calendar year from the effective date of suspension, any student who has been suspended one time shall, upon written application, be reinstated to the University and to the college or school in which the student was previously enrolled, unless the student petitions for admission to another college or school. The college which reinstates the student removes the student's suspension restriction in Admissions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student and that college stipulate otherwise. Each college or school shall have the right to establish requirements or performance expectations.

After the second or any subsequent suspension, a student may be reinstated to the University provided that a college or school agrees to reinstate the student. After a student has been reinstated, he/she must apply for readmission through the Office of Admissions and Records.

## **Appeal of Suspension**

Imposition of academic suspension based on grade-point average, failure to meet the conditions previously specified for removal of academic probation, or failure to meet the conditions of admission, may be appealed under the following conditions:

- The student may appeal individual final course grades and, if successful, may be reinstated.
- The student may make an appeal to the appropriate dean based on erroneous calculation of the grade-point average or on erroneous calculation of the time period within which a grade-point average must be achieved. The decision of the dean, as the President's designee, is final.

Students have the right to appeal academic suspensions based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran's status, religion, age, disability, national origin, creed, ancestry, or political affiliation. At the dean's discretion, suspensions may remain in effect until appeal procedures are completed.

Step 1. The student shall discuss the complaint with the dean involved within 30 calendar days of the action taken. If the two parties are unable to resolve the matter satisfactorily within 15 calendar days, the student may proceed to Step 2.

Step 2. The student must prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document shall be given to the University Committee on Student Rights and Responsibilities. Within 15 calendar days of receipt of the appeal, the University Committee on Student Rights and Responsibilities will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.
2. The student may be advised by a person of his/her choice from within the institution; likewise, the academic officer recommending suspension may have an adviser from within the institution. Such advisers may consult with but may not speak on behalf of their advisees or otherwise participate.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The decision of the University Committee on Student Rights and Responsibilities will be sent to the dean involved and the student within 7 calendar days of the hearing. If the decision requires a reinstatement, the dean will take action in accordance with the Committee's decision. If the decision of the Committee is to uphold the suspension, the student's appeal must reach the appropriate Vice President within 30 calendar days of receipt of the Committee decision. The Vice President will review and make a decision regarding the suspension within 15 calendar days of receiving the student's appeal. The decision of the Vice President, as the President's designee, is final.

## Uniform Academic Dismissal Regulations

Academic dismissal from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University. Academic dismissal can result from repeated failure to make academic progress and/or to meet probationary terms set forth in writing by the student's college or school.

After five calendar years from the effective date of academic dismissal, any student who has been dismissed shall, upon written application, be considered for reinstatement to the University, with the terms of reinstatement to be established by the college or school entered. Failure to meet these terms will result in permanent academic expulsion.

## Appeal of Dismissal

**Note: The procedures and appeals described do not apply to dismissal as a sanction for academic dishonesty.**

The time limitations stated herein are suggested in order to render a decision as expeditiously as possible. In the case of University holidays or absence of person(s) involved, reasonable delays may be expected.

A decision to dismiss a student for failure to meet academic standards (as distinguished from academic dishonesty) can be made only after the student has been counseled by the appropriate departmental committee or representative, with counseling to take place as soon as possible after discovery of the problem.

After the student is given a reasonable opportunity to correct deficiencies, there shall then be a formal review of the student's status by the appropriate departmental or program committee to determine whether the student shall be retained or dismissed. The student may provide the committee written documentation of his/her efforts to correct deficiencies.

A committee recommendation for dismissal, including any documentation provided by the student to the committee, shall be forwarded to the student's dean and to the student. Within 15 calendar days of receipt of the committee's recommendation, the dean shall inform the student and the student's department/program of his/her decision. A decision to dismiss shall specify whether the dismissal is from the program or college/school. The dean may also dismiss a student from the institution if the student does not meet institutional standards.

Dismissal, based on grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution, may be appealed.

**Step 1.** The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

**Step 2.** The student will forward a copy of the appeal to the appropriate Vice President within 15 calendar days of failure to resolve the matter at the dean's level. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. The decision of the Vice President, as the President's designee, shall be rendered within 15 days of receipt of the student's appeal and is final.

Dismissal, based on failure to meet academic requirements or performance standards irrespective of grades or grade-point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution, may also be appealed. Students have the right to appeal academic dismissal based on requirements or standards other than grades or grade-point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran's status, religion, age, disability, national origin, creed, ancestry, or political affiliation.

**Step 1.** The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

**Step 2.** The student will forward a copy of the appeal to the University Committee on Student Rights and Responsibilities, which, within 15 calendar days of receipt of the student's appeal, will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of date, time, and place of hearing.

2. The student may be advised by a person of his/her choice from the institution; likewise, the academic officer recommending academic dismissal may have an adviser from the institution. Such advisers may consult with but may not speak on behalf of their advisees or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.

3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.

4. Witnesses may be called by any of the parties involved.

5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within seven days. The committee's recommendation for dismissal must be reviewed by the appropriate Vice President, who may confirm or remand the recommendation with specific instructions. Prior to the decision of the Vice President, the student will be given an opportunity to discuss the appeal with the Vice President. Within 15 calendar days of a recommendation for dismissal confirmed by the Vice President, the student may appeal to the President. The decision of the President is final.

## **Academic Integrity/Dishonesty**

The academic development of students and the overall integrity of the institution are primary responsibilities of WVU. Academic dishonesty is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

## **Responsibilities**

Students should act to prevent opportunities for academic dishonesty to occur, and in such a manner to discourage any type of academic dishonesty. Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and public safety officers, shall promptly report each known case of academic

dishonesty to the appropriate supervisor, department chairperson, or dean of the college or school concerned, and to the Office of Judicial Programs, Office of Student Life.

## **Academic Dishonesty Defined**

West Virginia University expects that every member of its academic community shares the historic and traditional commitment to honesty, integrity, and the search for truth. Academic dishonesty is defined to include but is not limited to any of the following:

- **Plagiarism:** To take and pass off as one's own the ideas, writings, artistic products, etc. of someone else; for example, submitting, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part, from the work of others, whether such source is published, including (but not limited to) another individual's academic composition, compilation, or other product, or commercially prepared paper.

- **Cheating and dishonest practices** in connection with examinations, papers, and projects, including but not limited to:

- a. Obtaining help from another student during examinations.

- b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his/her own.

- c. The unauthorized use of notes, books, or other sources of information during examinations.

- d. Obtaining without authorization an examination or any part thereof.

- **Forgery, misrepresentation or fraud:**

- a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.

- b. Use of University documents or instruments of identification with intent to defraud.

- c. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.

- d. Knowingly presenting false data or intentionally misrepresenting one's records for personal gain.

- e. Knowingly furnishing the results of research projects or experiments for the inclusion in another's work without proper citation.

- f. Knowingly furnishing false statements in any University academic proceeding.

## **Procedure for Handling Academic Dishonesty Cases**

Academic dishonesty includes plagiarism; cheating and dishonest practices in connection with examinations, papers, and projects; and forgery, misrepresentation, and fraud. Some cases of forgery, misrepresentation, or fraud which occur outside the context of courses or academic requirements may be referred directly to the University Committee on Student Rights and Responsibilities by any member of the University community. In such cases, the University Committee on Student Rights and Responsibilities will arrange a hearing following the procedure outlined in Step 3 within 15 calendar days of receipt of the charges.

**Step 1.** If a student is charged with academic dishonesty, the instructor will contact the honesty officer. If the dishonesty occurs in a college or school other than that in which the student is enrolled, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.

**Step 2.** If the student denies guilt, if the student believes the penalty imposed in Step 1 is unjust, or if the instructor and/or department chairperson determines the penalties available at Step 1 are insufficient for a specific act, the dean of the college or school in which the course is offered shall be notified in writing of the specifics of the case. The dean shall then implement the following steps within 15 calendar days of receipt of notification:

1. Formal notification to the faculty member that the student is appealing the penalties imposed in Step 1, or formal notification to the student and faculty member of the charges and nature of evidence which, if proved, would justify additional action.

2. Opportunity for the student, faculty, and witnesses to respond or present evidence in writing to the charges.

3. Review by the dean of the facts and evidence presented, and a determination of the penalty or action, if any, to be applied.

**Step 3.** If the student wishes to appeal the decision of the dean, the appeal must reach the University Committee on Student Rights and Responsibilities within 30 calendar days of the student's receipt of the dean's decision. The University Committee on Student Rights and Responsibilities will arrange a hearing within 15 calendar days using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.

2. The student may be advised by a person of his/her choice from within the institution; likewise, the academic officer recommending the additional action may have an adviser from within the institution. Such advisers may consult with, but may not speak on behalf of their advisees, or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities Chairperson.

3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.

4. Witnesses may be called by any of the parties involved.

5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of those involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within seven days of the hearing. If the University Committee on Student Rights and Responsibilities finds the student guilty, it will determine the penalty it deems appropriate under the circumstances and inform all parties involved. The penalty imposed cannot be more severe than the penalty imposed by the dean.

**Step 4.** Only sanctions of suspension or dismissal invoked or upheld by the University Committee on Student Rights and Responsibilities may be appealed to the President or his/her designee. Such appeals must reach the President's Office within 30 calendar days after receipt of written notice of the decision of the University Committee on Student Rights and Responsibilities. The decision of the President or the President's designee is final.

# Fees

## Fee Regulations

All West Virginia University fees are subject to change. All fees are due and payable to the Controller on the days of registration. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Stewart Hall.

All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University. No student will be permitted to register at the University after the eighth day of a semester or the fourth calendar day of the summer sessions or a single summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$20.00.

Registering students pay the fees shown in the fee charts, plus special fees and deposits as required.

No degree is conferred upon any candidate and no transcripts are issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

It is the policy of West Virginia University to place on restriction students who have outstanding debts to a unit or units of the University. The restriction may include, but is not limited to, the withholding of a student's registration, a student's diploma, or a student's transcript.

## Special Fees

### Application for Undergraduate Admission

(Resident) .....	\$10.00
(Nonresident) .....	20.00
Application for Admission (Dentistry and Medicine) .....	30.00
Application for Admission (Law or Graduate Studies) .....	25.00
Certificate of Advanced Study in Education .....	2.00
Diploma Replacement .....	20.00
Examination for Advanced Standing .....	35.00
Examination for Entrance Credit, per unit .....	1.00
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation .....	20.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Late Registration (non refundable) .....	20.00
(Not charged to students who complete registration during the regular registration days set forth in the University Calendar.)	
For graduate students not otherwise enrolled at time of final exam. ....	50.00
Professional Engineering Degree (includes \$20.00 Graduation Fee) ..	35.00
Program Reactivation Fee (Graduate Students) .....	20.00
Reinstatement of Student Dropped from the Rolls .....	10.00
Student Identification Card Replacement .....	10.00

Student's Record Fee .....	3.00
Official Transcript .....	3.00
Official Letter .....	3.00
(Statement of Degree Letter, Grade-Point Average Letter) .....	5.00
Priority Service (Transcript/Letter) .....	5.00

## Financial Aid

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools, from the College Scholarship Service, or the WVU Financial Aid Office. Forms are dated for the appropriate academic year.

*Your Guide to Financial Aid-West Virginia University* is available at the WVU Financial Aid Offices, Mountainlair, Downtown Campus, and 104 Health Sciences Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus courses are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay a \$50.00 course fee for each off-campus course taken except for courses offered by the College of Business and Economics, which is \$80.00 per course.

## Laboratory Fees

Consult specific departmental sections of this catalog concerning non-refundable deposits and microscope rental fees. Please consult the current schedule of courses for courses with laboratory fees.

## Service Charge on Returned Checks

A service charge of \$10.00 is collected on each check returned unpaid by the bank upon which it was drawn. If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid. Registration is cancelled if the check is not redeemed within three days from date of written notice. In such a case the student may be reinstated when he/she redeems the check, pays the \$10.00 service charge, the \$10.00 reinstatement fee, and the \$20.00 late payment fee.

## Non-Sufficient Funds Check Policy

Payments of tuition, fees, and other charges by check are subject to WVU's Non-Sufficient Funds Check Policy. A copy of the policy is available in the Bursar's Office.

## Identification Card

An identification card is issued to each full-time student when fees are paid in full. Certain part-time students can be eligible for an identification card when the appropriate fees are paid in full. It admits the owner to certain University athletic events, various activities of student administration, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

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## Summer Tuition and Fees

<i>Undergraduate Students</i>	<i>Resident</i>	<i>Nonresident</i>
Tuition, per semester hour	\$59.00	\$208.00
Daily Athenaeum Fee*	2.00	2.00
Radio Station Fee*	2.00	2.00
Health, Counseling, and Program Services Fee	36.00	36.00
Mountainlair Construction Fee, per six week summer session or any portion thereof*	19.00	19.00
Student Affairs Fee	10.00	10.00
Transportation Fee	17.00	17.00

\*Fee required of all students. (Non refundable unless student withdraws officially before the close of general registration.)

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## Refund of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Controller evidence of eligibility for a refund during the semester. Students dropping below full-time must apply for a refund of tuition with the Office of Admissions and Records.

To withdraw officially, a student must apply to the Division of Student Affairs for permission. Semester fees will be returned in accordance with the following schedule:

Academic Year (Semester)	Refund
During the first and second weeks	90%
During the third and fourth weeks	70%
During the fifth and sixth weeks	50%
Beginning with the seventh week	No Refund

## Summer Sessions and Non-Traditional Periods

Refunds for summer sessions and non-traditional periods are established based upon the refund rate for the academic year. For specific information concerning summer session refunds, see the appropriate *Summer Schedule of Courses*. Should the percentage calculation identify a partial day, the entire day will be included in the higher refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit if the call comes before the end of the first three-fourths of the semester, and that full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

## Estimated Expenses for Health Sciences Center Programs

These estimated expenses are accurate as of February 1, 1993 and are subject to change. For current accurate tuition costs, please call Admissions and Records at 1-800-344-WVU1. Tuition and registration fees are the same for both semesters. Some expenses, such as instruments and books, are different for the second semester.

School and Division	Tuition and Registration*		Instruments	Lab coats, Uniforms, etc.	Books	TOTALS	
	Resident	Nonresident				Residents	Nonresidents
<b>Dentistry</b>							
First Year	\$1,192.00	4,784.00	3,700.00	88.00	740.00	5,720.00	9,312.00
First Summer	644.00	1,499.00	3,000.00	—	200.00	3,844.00	4,699.00
Second Year	1,192.00	4,784.00	3,000.00	110.00	300.00	4,602.00	8,194.00
Second Summer	644.00	1,499.00	500.00	—	200.00	1,344.00	2,199.00
Third Year	1,192.00	4,784.00	500.00	—	80.00	1,772.00	5,364.00
Third Summer	644.00	1,499.00	—	—	—	644.00	1,499.00
Fourth Year	1,192.00	4,784.00	500.00	—	—	1,692.00	5,284.00
<b>Dental Hygiene</b>							
Freshman	1,142.00	3,246.00	285.00	25.00	250.00	1,702.00	3,806.00
Sophomore	1,142.00	3,246.00	1,000.00	225.00	255.00	2,622.00	4,726.00
Junior	1,142.00	3,246.00	725.00	100.00	425.00	2,392.00	4,496.00
Senior	1,142.00	3,246.00	725.00	100.00	225.00	2,192.00	4,246.00
<b>Medicine</b>							
First Year	3,367.00	7,663.00	225.00	50.00	350.00	3,992.00	8,288.00
Second Year	3,367.00	7,663.00	420.00	50.00	300.00	4,137.00	8,433.00
Third Year	3,108.00	7,019.00	—	—	275.00	3,383.00	7,294.00
Third Year Summer	86.00	86.00	—	—	—	86.00	86.00
Fourth Year	3,108.00	7,019.00	—	—	150.00	3,258.00	7,169.00
Fourth Year Summer	172.00	172.00	—	—	—	172.00	172.00

School and Division	Tuition and Registration*		Instruments	Lab coats, Uniforms, etc.	Books	Totals	
	Resident	Nonresident				Residents	Nonresidents
<b>Medical Technology</b>							
Junior	1,142.00	3,246.00	159.00	250.00	525.00	2,076.00	4,180.00
Summer	250.00	670.00	—	250.00	300.00	800.00	1,220.00
Senior	1,142.00	3,246.00	—	250.00	—	1,392.00	3,496.00
<b>Physical Therapy</b>							
Junior	1,142.00	3,246.00	90.00	90.00	500.00	1,822.00	3,926.00
Summer Rotation	23.00	23.00	—	—	—	23.00	23.00
Senior	1,142.00	3,246.00	—	70.00	500.00	1,712.00	3,816.00
Summer Rotation	46.00	46.00	—	—	—	46.00	46.00
Fall	60.00	60.00	—	—	—	60.00	60.00
<b>Nursing</b>							
Sophomore	1,142.00	3,246.00	40.00	200.00	750.00	2,132.00	4,236.00
Summer	392.00	1,023.00	—	50.00	150.00	592.00	1,222.00
Junior	1,142.00	3,246.00	—	50.00	300.00	1,492.00	3,596.00
Senior	1,142.00	3,246.00	—	—	300.00	1,442.00	3,546.00
<b>Pharmacy</b>							
Third Year	1,350.00	3,584.00	75.00	65.00	400.00	1,890.00	4,124.00
Fourth Year	1,350.00	3,584.00	—	—	200.00	1,550.00	3,784.00
Summer	1,063.00	2,868.00	—	—	—	1,063.00	2,868.00
Fifth Year	1,350.00	3,584.00	—	35.00	100.00	1,485.00	3,719.00

\*Includes \$200.00 Resident Health Professions Education Fee or \$540.00 Nonresident Health Professions Education Fee.

## **Residency Policy**

### **Classification Of Students for Admission and Fee Purposes**

#### **Section 2. Classification for Admission and Fee Purposes**

2.1 Students enrolling in a West Virginia public institution of higher education shall be assigned a residency status for admission, tuition, and fee purposes by the institutional officer designated by the president. In determining residency classification, the issue is essentially one of domicile. In general, the domicile of a person is that person's true, fixed, permanent home and place of habitation. The decision shall be based upon information furnished by the student and all other relevant information. The designated officer is authorized to require such written documents, affidavits, verifications, or other evidence as is deemed necessary to establish the domicile of a student. The burden of establishing domicile for admission, tuition, and fee purposes is upon the student.

2.2 If there is a question as to domicile, the matter must be brought to the attention of the designated officer at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning domicile shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

2.3 The previous determination of a student's domiciliary status by one institution is not conclusive or binding when subsequently considered by another institution; however, assuming no change of facts, the prior judgment should be given strong consideration in the interest of consistency. Out-of-state students being assessed resident tuition and fees as a result of a reciprocity agreement may not transfer said reciprocity status to another public institution in West Virginia.

#### **Section 3. Residence Determined by Domicile**

3.1 Domicile within the State means adoption of the State as the fixed permanent home and involves personal presence within the State with no intent on the part of the applicant or, in the case of a dependent student, the applicant's parent(s) to return to another state or country. Residing with relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain domicile in this State for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least twelve months of continued presence within the State prior to the date of registration, provided that such twelve months' presence is not primarily for the purpose of attendance at any institution of higher education in West Virginia.

Establishment of West Virginia domicile with less than twelve months' presence prior to the date of registration must be supported by evidence of positive and unequivocal action. In determining domicile, institutional officials should give consideration to such factors as the ownership or lease of a permanently occupied home in West Virginia, full-time employment within the State, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, possessing a valid West Virginia driver's license, and marriage to a person already domiciled in West Virginia. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

Factors militating against the establishment of West Virginia domicile might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents' health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the State when school is not in session.

## **Section 4. Dependency Status**

4.1 A dependent student is one who is listed as a dependent on the federal or state income tax return of his/her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same domicile as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the domicile of the parent with whom he/she lives or to whom he/she has been assigned by court order. However, a dependent student who enrolls and is properly classified as an in-state student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

4.2 A nonresident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain domicile in this State for admission or fee payment purposes.

## **Section 5. Change of Residence**

5.1 A person who has been classified as an out-of-state student and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he/she has established domicile in West Virginia with the intention of making the permanent home in this State. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements, but also by that person's actions. In making a determination regarding a request for change in residency status, the designated institutional officer shall consider those actions referenced in Section 2 above. The change in classification, if deemed to be warranted, shall be effective for the academic term or semester next following the date of the application for reclassification.

## **Section 6. Military**

6.1 An individual who is on full-time active military service in another state or foreign country or an employee of the federal government shall be classified as an in-state student for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

6.2 Persons assigned to full-time active military service in West Virginia and residing in the State shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

## **Section 7. Aliens**

7.1 An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 3 may be eligible for in-state residency classification, provided that person is in the State for purposes other than to attempt to qualify for residency status as a student. Political refugees admitted into the United States for an indefinite period of time and without restriction on the maintenance of a foreign domicile may be eligible for an in-state classification as defined in Section 3. Any person holding a student or other temporary visa cannot be classified as an in-state student.

## **Section 8. Former Domicile**

8.1 A person who was formerly domiciled in the state of West Virginia and who would have been eligible for an in-state residency classification at the time of his/her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one-year period of time and satisfies the conditions of Section 3 regarding proof of domicile and intent to remain permanently in West Virginia.

## **Section 9 . Appeals**

At a minimum, such procedures shall provide that:

9.1 Each institution shall establish procedures which provide opportunities for students to appeal residency classification decisions with which they disagree. The decision of the designated institutional official charged with the determination of residency classification may be appealed in accordance with appropriate procedures established by the president of the institution. At a minimum, such procedures shall provide that:

9.1.1 An institutional committee on residency appeals will be established to receive and act on appeals of residency decisions made by the designated institutional official charged with making residency determinations.

9.1.1a The institutional committee on residency shall be comprised of members of the institutional community, including faculty and student representatives, and whose number shall be at least three, in any event, an odd number. The student representative(s) shall be appointed by the president of the institutional student government association while the faculty representative(s) shall be selected by the campus-wide representative faculty organization.

9.1.1b The student contesting a residency decision shall be given the opportunity to appear before the institutional committee on residency appeals. If the appellant cannot appear when the committee convenes a meeting, the appellant has the option of allowing committee members to make a decision on the basis of written materials pertaining to the appeal or waiting until the next committee meeting.

9.1. 2 The residency appeal procedures will include provisions for appeal of the decision of the institutional committee on residency appeals to the president of the institution.

9.1. 3 Residency appeals shall end at the institutional level.

# Graduate Programs in Basic Sciences

George A. Hedges, Chairperson of the Health Sciences Graduate Council

## **Degrees Offered:**

### **Doctor of Philosophy and Master of Science in:**

**Anatomy**

**Biochemistry (Medical)**

**Microbiology and Immunology**

**Pharmacology and Toxicology**

**Physiology (Medical)**

### **Master of Science only in:**

**Medical Technology**

*A master's degree in public health has been approved but not implemented.*

## **Nature of Program**

Graduate degrees are offered by the School of Medicine and the Departments of Anatomy, Biochemistry, Pathology (Medical Technology), Microbiology Pharmacology and Toxicology, and Physiology. Brief guidelines and descriptions of these programs are found in this catalog. For more detailed presentation of graduate programs, as well as the policies and rules governing graduate education, the *West Virginia University Graduate Catalog* should be consulted.

## **Health Sciences Center Graduate Council**

The Health Sciences Center Graduate Council advises the Vice President for Health Sciences. In this role the Council monitors and administers the graduate studies policies of the schools located at the Health Sciences Center.

## **Application and Admission**

Prospective graduate students are urged to initiate application for admission as early as possible. The first step of a student interested in a degree program should be to ask for information from the department, division, school, or college offering the program desired; the reply to such an inquiry will include instructions for applying to the particular program.

In all cases, application must be made for admission to graduate study on standard forms provided by the WVU Office of Admissions and Records. The completed form is to be returned to the Office of Admissions and Records, and must be accompanied by payment of a non-refundable special service fee of \$25.00. Applicants must at the same time request the registrar or records office of the college of their baccalaureate degree to send an official transcript directly to the Office of Admissions and Records. If other institutions have been attended in the course of undergraduate or graduate study, transcripts should be requested from them as well. No one is admitted to graduate study who does not hold a baccalaureate degree.

If the applicant meets the minimum admission requirements of WVU, a copy of the application is forwarded to the faculty of the program of interest. Any graduate degree program is permitted to set admission requirements which go beyond the minimum admission standards of the University. No one can pursue an advanced degree at WVU unless admitted to the appropriate degree program.

## Reapplication

When a student graduates or completes the program for which he/she applied, the student must reapply and be readmitted before taking further course work at WVU. This policy assures that the University is informed of the student's objectives and that he/she is assigned an appropriate adviser. Students will be assessed the application fee for each new application.

When eight years have passed since initial course work, a student must reapply. The application fee will be assessed.

## Classification of Graduate Students

**Regular:** A regular graduate student is a degree-seeking student who meets all the criteria for regular admission to a program of his/her choice. The student must possess a baccalaureate degree from a college or university, have at least a grade-point average of 2.5 (on a 4.0 scale), have met all the criteria established by the degree program, and be under no requirements to make up deficiencies.

**Provisional:** A student may be admitted as provisional by any unit when the student possesses a baccalaureate degree but clearly does not meet the criteria for regular admission. The student may have incomplete credentials, deficiencies to make up, or may have an undergraduate scholastic record which shows promise, but less than the 2.5 grade-point average required for regular admission.

**Non-Degree:** A non-degree student is a student not admitted to a program. Admission as a non-degree student does not guarantee admission to any course or program. To be admitted as a non-degree student, a student must only present evidence of a baccalaureate degree, however the student must obtain a 2.25 grade-point average on the first 12 credit hours of course work and maintain this average as long as enrolled. To be eligible to enter a degree program, the student must maintain a minimum of a 2.75 grade-point average on all course work taken since admission as a graduate student.

## Reclassification

### ***Provisional to Regular***

- The provisions of a student's provisional status must be specified in the letter of admission.

- To be reclassified as a regular student, a student must meet the provisions stated in the letter of admission and achieve a minimum grade-point average of 2.75 on all course work taken during the provisional period. Individual degree programs may set higher grade-point average requirements.

- No later than the completion of the 18th credit hour, a unit must review the student's record and make a final decision on the student's admission. A student who has met the provisions of admission and achieved the required grade-point average will be reclassified as a regular student. A student who fails to meet the provisions of admission or who fails to achieve the required grade-point average will be suspended, but may be reinstated in order to transfer to another program or to non-degree status. The academic unit must notify the student and the Office of Admissions and Records of its decision.

- Upon notification by the appropriate academic unit, the Office of Admissions and Records will prohibit the registration of all provisional graduate students who have reached the maximum of 18 credit hours. Registration will

not be permitted until the student is reclassified as a regular student, an exception is granted by an academic dean, or the student is transferred.

- A student may be admitted as a provisional graduate student more than one time, but not to the same graduate program.

- All credit hours taken since admission as a provisional graduate student or to be applied to a degree count in the 18 credit-hour limit, i.e., undergraduate or graduate credit, P/F, S/U, graded courses, credit by senior petition, and transfer credit.

### ***Regular or Provisional to Non-Degree:***

- Regular and provisional students may become non-degree students by choice. This includes students who fail to meet admission or academic standards or who withdraw voluntarily.

- To change a student to non-degree status, the adviser must process a Graduate Studies Transfer/Status form through the Health Sciences Center Graduate Programs Office.

### ***Non-Degree to Regular or Provisional:***

- Non-degree students who later wish to become degree candidates must transfer and present all the credentials required by the degree program. This requires the processing of a Graduate Studies Transfer/Status form by the student's adviser through the Health Sciences Center Graduate Programs Office.

- For admission to a degree program, a non-degree student must have achieved a minimum grade-point average of 2.75 on all course work taken since admission as a graduate student.

## **Graduate Record and Other Examinations**

Many programs at WVU require Graduate Record Examination (GRE) scores from all applicants, but in no program are they the sole criterion for admission. Some programs require both the general aptitude and the appropriate advanced test before considering an applicant for admission. All departments in the School of Medicine require that a student take the GRE test. The School of Pharmacy also requires a student have the GRE.

## **Admission of International Students**

International students wishing to enroll for graduate work at WVU must comply with the stated academic requirements for admission and with certain additional academic and nonacademic requirements as follows:

### **Early Inquiry and Application**

International applicants should forward a letter of inquiry one year before the intended time of beginning study in the United States.

### **English Proficiency**

International applicants must present a composite score of at least 550 on the "Test of English as a Foreign Language" (TOEFL) if their family language and schooling is not English.

### **Credentials**

See the *WVU Graduate Catalog*.

## **Intrauniversity Transfers**

To transfer from one school/department to another, a student may initiate a transfer request by contacting the Health Sciences Center Graduate Programs Office or his/her adviser. The adviser must contact the Health Sciences Center Graduate Programs Office, which will complete transfer.

## **Credits**

Credit toward a graduate degree may be obtained only for courses listed in the graduate catalog and numbered 200–499, in which the grade earned is A, B, C, or S. No course in which the grade earned is D, P, F, or U can be counted toward a graduate degree.

## **Employed Graduate Students**

Graduate students will be required by their advisers to limit their credit loads in proportion to the outside service rendered and the time available for graduate study. In general, persons in full-time service to the University, or other employer, will be advised to enroll for no more than six hours of work in any one semester and those in half-time service for no more than 12 hours. Maximum credit loads may be less for employed graduate students in some academic colleges, schools, and departments.

## **Non-Degree Graduate Students**

A non-degree graduate student may accumulate unlimited graduate credit hours, but if the student is later admitted to a degree program, the faculty of that program will decide whether or not any credit earned as a non-degree student may be applied to the degree. Under no circumstances may a non-degree student apply more than 12 hours of credit toward a degree.

## **Transfer or Transient Credit**

To apply graduate-level credits from other institutions toward a master's degree at WVU, students must get permission from the individual schools or colleges. The standardized transient application form must be approved and signed by a unit chairperson or designate, prior to the student enrolling in the course(s) to be transferred to WVU. The school or department submits the approved form to the Health Sciences Graduate Programs Office for final approval and submission to Admissions and Records. It is the students responsibility to see that Admissions and Records gets an original transcript from the other institution. Only credit earned at institutions accredited at the graduate level may be transferred.

Graduate courses taken elsewhere will not be approved for transfer credit unless the transient application form was approved before enrolling in them. When a school or department approves the form, it is sent to the Health Sciences Center Graduate Programs Office for approval. A maximum of 12 semester hours from other institutions will be accepted for credit at WVU in master's degree programs requiring 30 to 41 semester hours. Eighteen semester hours will be accepted for master's degree programs requiring 42 or more semester hours. Individual graduate programs may accept fewer credit hours.

## Time Limits

**Master's Degree:** All requirements for a master's degree must be completed within eight years preceding the student's graduation.

**Doctoral Degree:** The doctorate is a research or performance degree and does not depend on the accumulation of credit hours. The three requirements of the degree are admission to candidacy, residency, and completion and defense of the dissertation. The degree signifies that the holder has the competence to function independently at the highest level of endeavor in the chosen profession. Hence, the number of years involved in attaining or retaining competency cannot be readily specified. Rather, it is important that the doctoral student's competency be assessed and verified in a reasonable period of time prior to conferral of the degree.

The qualifying examination is the method of assessing whether the student has attained sufficient knowledge of the discipline and supporting fields in order to undertake independent research or practice. It is expected that the examination will occur after all course work has been completed and language or other requirements satisfied, and it consists of a series of examinations covering all areas specified in the plan of study. After the component parts of the qualifying examination have been successfully passed, the student is admitted to candidacy for the degree. It is sometimes called the candidacy examination because no one can be called a doctoral candidate until this first requirement for the degree has been met.

Because the qualifying examination attests to the academic competence of the student who is about to become an independent researcher or practitioner, the examination should not precede the degree by too long a period of time. Consequently, doctoral candidates are allowed no more than five years in which to complete remaining degree requirements. In the event a student fails to complete the doctorate within five years after admission to candidacy, an extension of time can be obtained only by repeating the qualifying examination, and meeting any other requirements specified by the student's committee.

## Contractual Nature of Graduate Study

The student's rights, privileges, obligations, and responsibilities are contained in the graduate catalog, the plan of study, and, if research is one of the degree program requirements, the prospectus. Although not contracts in the formal legal sense, they are agreements between the University and a student for the accomplishment of planned educational goals.

## Plan of Study

The plan of study is submitted within the first academic year (18 hours for a master's and 30 hours for doctorate/after thesis committee for Nursing) to the Health Sciences Center Graduate Programs Office. The plan of study is subject to approval and is made a part of the student's record. It then becomes a formal agreement between student and program faculty as to the conditions which must be met for completion of the degree requirements. Any subsequent changes in plan of study (or prospectus) can be made only through mutual agreement, with a memorandum of changes sent to the Health Sciences Center Graduate Programs Office.

## **Records**

The Health Sciences Center Graduate Programs Office maintains all records for monitoring student progress and for certifying students for graduation. Among these records are plans of study (subject to chairperson of Health Sciences Center Graduate Council's approval); graduate committees (subject to school dean's or designate's approval and approval of the Health Sciences Center Graduate Programs Office); grades; and grade modifications, etc.

## **Grading**

Pass/fail grading is not applicable to the course work for a graduate degree. A graduate student may register for any course (1–499) on a pass/fail basis only if the course involved is not included in the student's plan of study and does not count toward a graduate degree. The selection of a course for pass/fail grading must be made at registration and may not be changed after the close of the registration period. A student who, having taken a course on a pass/fail basis, later decides to include the course as part of a degree program must re-register for the course on a graded (A, B, C, D, or F) basis.

## **Incompletes**

The grade of I is given when the instructor believes the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within one academic year or made a permanent incomplete. Grade modification forms are to be signed by the instructor of the course and then forwarded to the Health Sciences Center Graduate Programs Office for processing.

Grade changes other than I to a letter grade must be accompanied by an explanatory memo.

## **Dissertation Procedures**

**Procedural rules for dissertations and theses are found in the *WVU Graduate Catalog*.**

## **Dismissal**

Dismissal from a graduate or professional program may be based on program and/or professional performance standards other than cumulative grade-point average. Reasons must be based on catalog and other written documents describing academic and professional performance standards and expectations.

### ***Procedures***

1. Counseling by departmental committee or representative as soon as possible after discovery of problem.
2. Second counseling by departmental committee or representative after opportunity to improve if performance is not changed sufficiently.
3. Formal review of student status by department or program committee. The formal review will result in one of the following actions:
  - Student retained or recommended for dismissal.
  - Counseling or remediation steps required as a condition of retention.
  - Appeals available if dismissal recommended.

4. A dismissal decision by the dean of the student's school or college may be appealed to the University Conduct/Appeals Committee which will hold a hearing using the following procedures:

- The student may be advised by a person of his/her choice to assure due process protection not to affect the outcome of the proceedings. The adviser may consult with the student but shall not speak on behalf of the student or participate directly unless granted specific permission by the University Conduct/Appeals Committee.

- The formal rules of evidence do not apply.
- The administrative procedure is not adversarial in nature.
- Witnesses may be presented and examined under oath.
- An accurate record of the procedure is to be kept. The student may request a transcript of the proceedings at the student's expense.

- An academic appeals committee has the right to counsel in those proceedings in which the student has retained counsel. Such counsel may not speak on behalf of the institution or otherwise participate directly in the proceedings.

5. A decision for dismissal must be reviewed by the appropriate academic Vice President who may confirm or remand the recommendation with specific instructions.

6. Recommendation for dismissal confirmed by the appropriate academic Vice President may be appealed to the President. The decision of the President is final.

## **Students' Committees**

Doctoral dissertation committees will consist of no fewer than five members, the majority of whom, including the chairperson, will be regular graduate faculty. No more than one person may be a non-member. At least one member of every doctoral committee must be from a department other than the one in which the student is seeking a degree.

Master's committees of programs requiring a thesis will consist of no fewer than three members, the majority of whom will be regular graduate faculty, including the chairperson. No more than one person may be a non-member.

Master's committees of programs not requiring a thesis will consist of no fewer than three members, one of which must be a regular graduate faculty member. No more than one person may be a non-member, and the non-member cannot chair or advise.

Committee approval must be obtained prior to the second semester for a master's degree and prior to the fourth semester for the doctorate. Committee approval for the nursing program is after the third semester.

## **Committee Approval**

All graduate committees are subject to the approval of the school dean or designate and the Health Sciences Center Graduate Programs Office.

## **Anatomy**

Richard C. Wiggins, Chairperson

William Beresford, Graduate Coordinator

### ***Degrees Offered:***

***Master of Science, Doctor of Philosophy***

The Department of Anatomy in the School of Medicine offers graduate programs that are committed to training strong, independent researchers and capable teachers. This goal is accomplished through the completion of a carefully designed plan of study tailored to the individual student's interests. The program includes instruction in basic morphological, developmental, and functional aspects of human anatomy. Selected courses strengthen the area of interest of the student. The student conducts an original research project culminating in a dissertation (Ph.D.) or a thesis (M.S.).

### **Admission Requirements**

In addition to the admission procedure of the University, the Department of Anatomy requires that each applicant complete a departmental application form obtained from the department. Application forms and departmental information may be obtained by contacting the graduate coordinator, Department of Anatomy, School of Medicine, P.O. Box 9128, West Virginia University, Morgantown, WV 26506-9128.

After an application is favorably reviewed, applicants are invited for a personal interview whenever practical. The applicant is admitted by the decision of the chairperson, the director, and admissions officer of the graduate program, in consultation with the departmental graduate faculty.

It is recommended that the following courses be completed before entering the graduate program: algebra, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, and cell biology or general physiology. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants desiring consideration for financial aid should complete the application process as early as possible.

### **Doctor of Philosophy**

The first year of study consists of course work and starting research in one or more laboratories. These courses include gross anatomy, microanatomy, neurobiology, and seminar in anatomy. A combination of courses in other basic medical sciences, such as biochemistry, physiology, pathology, statistics, and advanced anatomy courses is chosen to meet the individual student's needs. Students are in good standing while a minimum 3.0 overall grade-point average is maintained.

To be admitted to candidacy for the Ph.D. degree, the student must pass the preliminary examination and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree, each student must complete a dissertation based on original research and defend the dissertation at

an oral examination. The student is also expected to present the experimental work at national meetings of scientific societies.

This program allows flexibility for each student. The precise plan of study is designed by the student and an advisory committee that is composed of faculty members selected by the student by the start of the second year.

## **Master of Science**

The master's program in anatomy is offered as a terminal degree primarily for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D. An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy and six to nine hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work, the student must complete a thesis based on original research and defend the thesis at an oral comprehensive examination.

## **Research Fields**

Cell biology of brain glial cells; molecular biology of brain disorders; childhood malnutrition and the brain; innervation and function of the airway; cell biology of occupational diseases of the lung; microcirculation and its role in liver function and wound healing; X-ray microanalysis of drug metabolism of cells; sensory pathways from the hand; orthopedic research.

## **Anatomy (ANAT)**

101. *Principles of Human Anatomy*. 4 hr. PR: BIOL 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development. (Section 01 for pharmacy students; 02 for nursing and dental hygiene students.)

102. *Gross Anatomy*. II. 3 hr. PR: ANAT 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck. (For physical therapy students.)

## **Dental Hygiene (DTHY)**

90. *Oral Histology*. II. 3 hr. PR: Consent of instructor or chairperson. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.

## **Anatomy (ANAT)**

303. *Conceptual & Applied Gross Anatomy*. I. 10 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the human body emphasizing conceptual, developmental and clinically-related topics.

305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.

308. *Neuroanatomy*. (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system.

309. *Microanatomy and Organology*. (For dental students and a limited number of regular full-time graduate students in the basic sciences.) I. 5 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.

312. *Special Topics in Anatomy*. I, II. 2–4 hr. per sem. PR: Consent of chairperson or instructor. Different topics of current interest in anatomy that are not included in the regular graduate courses.

314. *Applied Anatomy*. I, II. 2–6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.

316. *Craniofacial Growth and Maturation*. I. 1 hr. PR: Consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

318. *Oral Histology and Embryology*. (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.

319. *Advanced Head and Neck Anatomy*. 1 hr. PR: Dental, medical, or graduate student in basic sciences, or consent. Head and neck craniofacial anatomy as it applies to specialties in dental or medical practice.

320. *Electron Microscopy*. II. 2–4 hr. PR: Consent. (For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.

324. *Human Gross Anatomy*. (For dental students and a limited number of regular, full-time graduate students in medical basic sciences.) 7 hr. PR: Dental student standing or consent of chairperson. Human anatomy including cadaver dissection for dental students. 4 hr. lec., 3 hr. lab.

401. *Advanced Gross Anatomy*. I, II. 2–6 hr. per sem. PR: ANAT 303 or 324 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.

402. *Advanced Developmental Anatomy*. II. 2–4 hr. per sem. PR: ANAT 303 or 324 and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.

403. *Seminar*. I, II. 1–6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.

405. *Experimental Embryology*. II. (Alternate years.) 3 hr. PR: Embryology and cellular physiology and biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.

406. *Advanced Neuroanatomy*. I. 2–4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.

408. *Histochemistry*. II. (Odd numbered years.) 3 hr. PR: ANAT 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.

451. *Advanced Microanatomy and Organology*. I, II, or S. 2–4 hr. PR: ANAT 305 or 309, or BIOL 263 and consent of instructor or chairperson. An extension of the major topics included in ANAT 305 or 309. Special emphasis on recent contributions.

490. *Teaching Practicum I and II*. 1–3 hrs. Consent of chairperson. Supervised practice in college teaching of anatomy. Graded as S or U.

491. *Advanced Anatomy*. I, II. 1–6 hr. PR: Consent of chairperson.

497. *Research*. I, II, S. 1–15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Studies Committee.)

## BIOCHEMISTRY

Diana S. Beattie, Chairperson

Marilyn Evans, Graduate Coordinator

### **Degrees Offered:**

***Master of Science, Doctor of Philosophy***

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry.

### **Admission Requirements**

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed courses in qualitative-quantitative chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission into the program.

Application is made by submission of the following items to the Department of Biochemistry:

- The completed departmental application form (sent on request);
- Three letters of recommendation from professors who can evaluate the student's present abilities and potential;
- Official transcript of the applicant's college grades; and
- Official copy of Graduate Record Examination scores.

Owing to the sequence of courses, entrance in the fall is preferred, but exceptions may be made as necessary. Application material and program details may be obtained by writing the graduate coordinator, Department of Biochemistry, School of Medicine, P.O. Box 9142, West Virginia University, Morgantown, WV 26506-9142. The deadline for receipt of applications and supporting documents by the department is April 1; to be considered for financial support, applications should be submitted by February 1.

## Doctor of Philosophy

To assure that all students become familiar with the basic principles of biochemistry, the first year of the doctor of philosophy (Ph.D.) program is devoted primarily to course work. In addition to formal courses during the first semester, students participate in a laboratory program that involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice.

Upon successful completion of the first year, students will choose a dissertation research adviser, at which time emphasis will be placed on research. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, and a few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate; thus, students learn to organize effectively and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the research results to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

## Master of Science

The Department of Biochemistry offers the thesis master's degree. This program involves completion of a master's research project in addition to formal course work. Two to three years are generally required to complete the M.S. program.

## Research

Hormonal regulation of metabolism. Regulation of gene expression. Structure and function of nucleic acids. Chemistry of enzymes and serum proteins. Structure of connective tissue. Nutritional oncology. Secretory mechanisms. Biogenesis of membranes.

## Biochemistry (BIOC)

139 *Introduction to Biochemistry*. I. 4-5 hr. PR: General chemistry. (For medical technology and pharmacy students; others by consent.) Lecture and conference, 4 hr.; Laboratory/demonstration, 1 hr.

192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.

231. *General Biochemistry*. I. 7 hr. PR: General chemistry, organic chemistry. (For medical students; others by consent.) Consists of seven main lectures, one clinical correlation lecture and one problem session per week.

239. *Clinical Chemical Techniques*. II. 4 hr. PR: BIOC. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)

305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry, and consent. (For dental and graduate students.) Lecture, conference, and demonstration.

**399. *Special Topics.***

A. I, II. 1-2 hr. PR: Consent. Journal Club, Teaching and Laboratory Rotations.

B. I (4 hr.), II (3 hr.). PR: General chemistry, organic chemistry. For graduate students in basic sciences programs.

**490. *Teaching Practicum I and II.*** 1-3 hr. Consent of chairperson. Supervised practice in college teaching of biochemistry. Graded as S or U.

**491. *Advanced Study.*** I, II. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

**496. *Graduate Seminar.*** I, II. 1 hr. PR: Consent. Presentation and discussion of special topics.

**497. *Research.*** I, II, S. 1-15 hr. PR: Consent.

## **Conjoined Basic Sciences Courses (CC MD)**

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designated Conjoined Courses.

**350. *Radiation Safety and Radionuclide Usage.*** II. 1-2 hr. PR: PHYS 1 and 2, CHEM 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; NRC and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.

**370. *Medical Genetics.*** II. 2-4 hr. PR: Second-year medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as GEN 370, MED 370, PEDI 370.

**375. *Neurobiology.*** (For medical and a limited number of regular, full-time graduate students in the medical basic sciences.) II. 6 hr. PR: ANAT 301 and PSIO 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.

**399. *Selective Experiences in Medicine.*** (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (Graded as S or U.) The fourth year is selective and offers a wide range of opportunities. A one-month rotation in primary care, critical care, surgical subspecialty, and either a medicine or a pediatric subinternship are all required in the fourth year. The student works with an adviser to select the remainder of the individual program. This program must also be approved by the associate dean in the Office of Student and Curricular Affairs. The year is composed of ten one-month blocks, six months of which must be spent in programs in West Virginia. Selections are available in all departments within the School of Medicine. A catalog is available that lists the specific guidelines for the fourth-year curriculum.

# MICROBIOLOGY AND IMMUNOLOGY

John B. Barnett, Chairperson

Robert Burrell, Graduate Coordinator

## **Degrees Offered:**

***Master of Science, Doctor of Philosophy***

The Department of Microbiology and Immunology offers programs of study leading to the degrees of master of science (M.S.) and doctor of philosophy (Ph.D.) in microbiology and immunology. Students with an undergraduate degree can apply to either the M.S. or Ph.D. program. The major purpose of graduate education in the department is research training. The basic philosophy of the department is that the students have a strong foundation in basic concepts of microbiology and immunology and flexibility in choosing advanced course work in their specific areas of interest. A major emphasis of the graduate program is extensive laboratory research in microbiology and immunology. Each student will complete an original, in-depth research investigation. The overall aim of the program is to produce students capable of designing and doing independent research and teaching.

## **Admission Requirements**

Applicants to either the Ph.D. or M.S. graduate programs in microbiology and immunology ought to have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics (including calculus) in order to be considered for admission. Applicants must submit a departmental application form, three letters of recommendation, and general Graduate Record Examination (GRE) scores to the graduate coordinator, Department of Microbiology and Immunology, P.O. Box 9177, School of Medicine, West Virginia University, Morgantown, WV 26506-9177. In addition, transcripts and an official application for admission must be sent directly to the WVU Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009. Applicants for admission to a degree program should have a grade-point average of 3.0 or better and must take the general GRE. GRE scores are also used as one of several selection criteria for admission to the department's graduate program. Although no minimum score is required for selection, successful applicants usually have a combined score of 1500 or greater on the general GRE. International students must have a TOEFL score of at least 550. Early application is encouraged. Applicants desiring financial aid should complete their application before April 1. All applications must be completed by June 1 for fall admission. No mid-year admissions are made.

## **Program Requirements**

### **Master of Science**

Every student must take the following courses or demonstrate proficiency by examination in each of the following areas: Microbiology (MBIM) 301 *Medical Microbiology and Immunology*, MBIM 310 *Structure and Activities of Microorganisms*, and MBIM 391 *Advanced Topics* (laboratory rotation). Two semesters of biochemistry are required. The remainder of the course work is selected by the student and the advisory committee from the following courses: MBIM 327, 399

or any of the microbiology and immunology advanced study courses MBIM 491). Enrollment in MBIM 496 *Seminar* is required each semester that the student is in residence. All full-time students in the Department of Microbiology and Immunology are required to participate in teaching at least one semester a year.

The master of science program requires 30 hours of course work, of which at least 20 hours must be in microbiology and immunology. Six hours must be in research (MBIM 397). A grade-point average of at least 3.0 must be maintained. A thesis representing original research and a final oral examination are required. In general, two years are needed to complete the M.S. program.

## **Doctor of Philosophy**

Students with either a bachelor's or master's degree can apply to the Ph. D. program. Those with a bachelor's degree must complete the basic course requirements expected of an M.S. candidate. The doctoral candidate with an M.S. degree from another department must have had course work or demonstrate knowledge in microbiology and immunology and biochemistry equivalent to that of a master's student in the department. In addition, the doctoral student will take additional course work as determined by the student's graduate research advisory committee. A minimum of nine hours in MBIM 491 courses or selected advanced courses from other departments is required. Where appropriate, course work in related subjects such as computer science, cell biology, biochemistry, physical chemistry, and statistics will be required. MBIM 496 *Seminar* is a required course each semester that the student is in residence. The student will maintain a grade point average of 3.0. The doctor of philosophy program requires a dissertation representing the results of an original research investigation and the passing of a written qualifying and a final oral examination. The qualifying examination is given at the end of the first year of study. The final oral examination is given after completion of research and an acceptable dissertation. All full-time students are required to participate in teaching at least one semester a year. Three years are usually needed to complete the Ph.D. program.

The Department of Microbiology and Immunology has informal journal clubs in immunology and in microbiology. These are designed to help the students develop skills in reading, interpreting and discussing current research articles. All students are expected to participate in one or more.

For application materials, a description of faculty research interests, guidelines for graduate study in the Department of Microbiology and Immunology, or additional information, write to the chairperson, Admissions and Scholarship Committee, Department of Microbiology and Immunology, P.O. Box 9177, West Virginia University, Morgantown, WV 26506-9177.

## **Research**

*Cell Biology:* oncogenes and cell signalling.

*Genetics:* basic studies in the mechanisms of genetics including transfer of genetic information; recombinant DNA studies.

*Immunology:* immunopathology of pulmonary disease and microbial inhalants; developmental immunology; mechanisms of T cell function; immunogenetics; immunotoxicology; mucosal immunology; immunology of infectious microbes.

*Mycology*: pathobiology of medical mycoses; antibiotic susceptibility testing; environmental health implications of fungal and algal toxicoses.

*Parasitology*: host parasite relationships between helminths and insects with vertebrate hosts; protozoan endosymbionts.

*Pathogenic Bacteriology*: mode of action of microbial products in pathogenicity; ecology of clinical microbiology; antibiotic mode of action; immunomodulation of cystic fibrosis.

*Physiology*: nutrition and metabolism of a variety of pathogenic microorganisms; growth and protein synthesis of intracellular bacteria.

*Virology*: retroviral recombination, oncogene transduction, and human gene therapy.

## **Microbiology and Immunology (MBIM)**

26. *Microbiology II*. (For students in nursing and dental hygiene programs.); All students must have consent of instructor. I. 4 hr. PR: CHEM 11, 12 or equiv .

220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.

223. *Microbiology*. (For medical technology students; other students with consent.) II. 5 hr. PR or Conc.: Biochemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.

224. *Parasitology*. (For medical technology students; other students with consent.) II. 4 hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology and laboratory diagnosis.

301. *Microbiology*. (For medical students and a limited number of graduate students in the Health Science Center's basic science departments.) I. 5-7 hr. PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms and immunology. Emphasis on use of microbiology in solving clinical problems.

302. *Microbiology*. (For dental students only.) I. 5 hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.

310. *Structure and Activities of Microorganisms*. II. 3 hr. PR or Conc.: Biochemistry, consent. Molecular biology of *e. coli* and other selected organisms.

317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per semester.

A. *Parasitology laboratory*. II. 1 hr. PR: Consent.

B. *Special Problems in Microbiology*. II, S., VR. PR: Consent.

C. *Special Problems in Post Graduate Dental Microbiology*. II. 4 hr. PR: Consent.

327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.

391. *Advanced Topics*.

A. *Laboratory Rotation*. I. 3 hr. PR: Consent; For graduate students in Microbiology and Immunology. Assigned study to develop research laboratory techniques. Graded S or U.

B. *Immunology*. I, II, S. VR. PR: Consent. Independent study in immunology.

397. *Master's Degree Research or Thesis*. II, S. 1-15 hr. PR: Graduate students in Microbiology and Immunology. Students may enroll more than once. Graded S or U.



Microbiology 26:

(For students in nursing, dental hygiene, and respiratory therapy.)  
Basic and applied medical microbiology and immunology. Emphasizes principles of infection and resistance by body systems including the oral cavity.

399. *Special Topics in Microbiology, Cell Biology*. II. 3 hr. PR: Biochemistry; 1 yr. undergraduate biology; consent. Lectures in selected areas of cell biology.

490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in teaching of microbiology. Graded as S or U.

491. *Advanced Study*.

*Pathogenic Bacteriology*. I. 2 hr. PR: MBIM 301, 310 or equiv. Consent. Pathogenic bacteriology with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease

*Clinical Laboratory Bacteriology*. II. VR. PR: MBIM 301, 310, or equiv. Consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. The laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. Graded as S or U.

*Microbial Genetics*. I. 3 hr. PR: MBIM 310 or equiv. Consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.

*Microbial Metabolism*. II. 2 hr. PR: MBIM 310, or equiv., biochemistry, consent. Physiology, metabolism, and regulation of representative microbial groups.

*Microbial Metabolism Laboratory*. II. 1 hr. PR: Open to departmental graduate students only. Research techniques in metabolic regulation.

*Medical Mycology*. I. 3 hr. PR: Consent. Advanced study of fungi of medical importance, including the pathobiology of mycoses and toxicoses.

*Molecular Virology*. I. 3 hr. PR: MBIM 301, 310, or equiv., consent. Molecular biology of viruses that are important both biologically and medically. Includes a basic introduction to replication and genetics as well as current topics in molecular virology.

*Developmental Immunology*. I. 3 hr. PR: Consent. Examines the development of the lymphoid components of the immune system (B and T lymphocytes) and interactions leading to effective immune responses.

*Cellular and Genetic Basis of the Immune Response*. I. 3 hr. PR: Consent. Emphasis is on contemporary issues in understanding the genetic and cellular elements that impact immune responses.

*Contemporary Topics in Immunobiology II*. 3 hr. PR: Consent. Detailed coverage of major issues of contemporary research in immunobiology.

*Systems Immunology II*. 3 hr. PR: Consent. An integrative systems approach to immunology stressing how immunologic recognition is translated into biologic consequences. Advanced treatment of different aspects of the effector arm of immune responses.

496. *Seminar*. I, II. 1 hr. PR: Consent. Graduate students present at least one seminar to assembled faculty and students in Microbiology and Immunology. Graded as S or U.

497. *Research or Dissertation*. I, II, S. 1-15 hr. Students may enroll more than once. Graded S or U.

## PHARMACOLOGY AND TOXICOLOGY

William W. Fleming, Chairperson

Charles R. Craig, Graduate Coordinator

### ***Degrees Offered: Master of Science, Doctor of Philosophy***

Pharmacology and toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of master of science and doctor of philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, ion-channel pharmacology, malarial chemotherapy, immunotoxicology, and renal, hepatic, and pulmonary toxicology.

### **Admissions Requirements**

Regular applicants for the graduate program in pharmacology and toxicology should present, as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; four semesters of chemistry including two semesters of organic chemistry. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write to the Graduate Coordinator, Department of Pharmacology and Toxicology, P.O. Box 9223, WVU Health Sciences Center, Morgantown, WV 26506-9223.

### **Master of Science**

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is available as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project (thesis). The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 310 and 312, Statistics 311, and Pharmacology and Toxicology 361, 364, 367, 461, 462, and 497. Most students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research in lieu of a thesis.

The department is now offering a special, non-thesis master's program in pharmacology and toxicology. The program is limited and available only to residents in the occupational medicine program. Course requirements are minimal since students will have already completed the M.D. degree.

Requirements include the following:

- Completion of a laboratory research project in toxicology, the results of which will be presented to the department both as a written report and in a formal oral presentation.

- Demonstration of proficiency in the field of toxicology as evidenced by passing a comprehensive oral examination in the area of occupational toxicology given by a committee of three faculty members.

- A minimum of 36 credit hours approved by the department.

- Completion of the course in occupational toxicology (PCOL 362) with a grade of B or better.

- Participation in a toxicology journal club where the current research literature is reviewed.

- Attendance at departmental seminars relating to toxicology.

Master's committees will consist of no fewer than three members with no more than one from outside the department, the majority of which will be regular members of the graduate faculty including the chairperson. No more than one person may be a non-member.

## **Doctor of Philosophy**

Before official admission to candidacy for the doctorate, the student must satisfactorily complete a grant-writing exercise, an acceptable progress report, and an oral comprehensive qualifying examination. When a student has submitted a grant proposal, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral qualifying examination is administered in January of the student's third year in the program.

## **Dissertation**

Upon admission to candidacy for the degree of doctor of philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation which makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

## **Research Areas**

Autonomic pharmacology: autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to neurotransmitters; electrophysiologic studies of cardiac and smooth muscle; receptors and second messengers..

Chemotherapy: antimalarial agents, anticancer agents, effects of pharmacological agents on single-cell organisms.

Biochemical pharmacology: drug metabolism, effects of drugs on lipid and nucleic acid metabolism.

Endocrine pharmacology: mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development.

Neuropharmacology: biochemical and electrophysiological basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system, mechanisms of signal transduction.

Toxicology: metabolism of toxic agents, pulmonary toxicology, renal toxicology, immunotoxicology, and environmental toxicology, perinatal pharmacology and toxicology.

## **Pharmacology and Toxicology (PCOL)**

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.

243. *Pharmacology for Pharmacy Students*. I. 4 hr. PR: Completion of first year in Pharmacy; approval of course director. Principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.

360. *Pharmacology and Therapeutics*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacological actions and therapeutic uses of drugs.

361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in basic medical science departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.

362. *Occupational Toxicology*. II. 3 hr. PR: Consent. General principles of toxicology with special emphasis on occupational health. Classes of chemicals which pose problems in the workplace will be emphasized.

364. *Advanced Pharmacology*. I. (Alternate Years.) 1-6 hr. PR: PCOL 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology and advanced lectures in biochemical, endocrine, pulmonary, and cardiovascular pharmacology. 1-6 hr. lec. (Offered every second year.)

367. *Advanced Neuropharmacology*. I. 1-6 hr. PR: PCOL 361 or consent. Advanced lectures and discussion on drug receptor theory, neurophysiological aspects of pharmacology, supersensitivity, and the actions of drugs on the central and peripheral nervous system. 1-6 hr. lec. (Offered every second year.)

461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: PCOL 361 or graduate status in basic medical sciences.

462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.

490. *Teaching Practicum*. I, II. 1-3 hr. per sem. PR: PCOL 361 and consent. (For advanced graduate students.) Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology.

491. *Advanced Study*. I, II. 1-6 hr. PR: Consent of chairperson.

497. *Research*. I, II, S. 1-15 hr. per semester.

## **PHYSIOLOGY (MEDICAL)**

Ping Lee, Acting Chairperson

Matthew Boegehold, Graduate Coordinator

### **Degrees Offered:**

***Master of Science, Doctor of Philosophy***

The Ph.D. program is designed to produce physiologists of high quality, capable of conducting independent research and being effective teachers. Students in our department are exposed to all aspects of physiology and a variety

of related sciences. The master's program is designed as an introduction to research in physiology for students interested in, but not yet committed to, a research career. Students in this program receive training in the fundamentals of physiology and experience in a research laboratory.

### **Admission Requirements**

Applicants should have a strong background in biology and/or chemistry. In addition to a basic biology course, it is strongly recommended that applicants have taken cellular or molecular biology and an introductory physiology course; a course on comparative anatomy also provides particularly useful background information. Inorganic and organic chemistry are basic requirements, while physical chemistry is recommended but not required. Finally, as several areas of physiology require an understanding of the fundamentals of calculus and physics, introductory courses in these subjects are also essential.

The department requires the following materials for consideration for the M.S. or Ph.D. program: three letters of recommendation; transcripts of all undergraduate and graduate grades; a completed departmental application form; and Graduate Record Examination scores (aptitude and one advanced test). Students from non-English speaking countries also need a Test of English as a Foreign Language (TOEFL) score in excess of 550. A bachelor's degree, or equivalent, is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs can be obtained by writing to the Graduate Coordinator, Department of Physiology, P.O. Box 9229, School of Medicine, West Virginia University, Morgantown, WV 26506-9229. Although applications may be submitted as late as May of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

### **Master of Science**

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first two semesters are devoted largely to course work in physiology: ten hours of physiology, three hours of neurophysiology, and four hours of physiological methods. Students are also introduced to the research interests of the faculty through the graduate colloquium and rotations in some faculty members' laboratories. By the end of the second semester, students will have picked a thesis adviser and will begin work in that laboratory during the summer. The second year is spent primarily on research for and writing of the master's thesis. Students are required to take four hours of advanced physiology and present a research seminar during the second year.

### **Doctor of Philosophy**

The first year curriculum familiarizes the student with the basic information and principles that form a background for advanced work in physiology. Much of this overlaps with the basic science material presented to medical students, so that all students attend several medical school courses, including physiology and neurophysiology. A two-semester biochemistry course is also required. Finally, students lacking a statistical background are expected to take a basic statistics course.

In addition to this course work, students are introduced to the research interests of the physiology faculty through the graduate colloquium and rotations

in some faculty members' laboratories. The latter are designed to help students choose a thesis adviser by exposing them to the experimental approaches and techniques used in different laboratories within the department.

During the first summer, students are expected to begin research projects in a departmental research laboratory of their choice. This allows a student to explore an area of research interest and to develop a working relationship with a faculty member without a firm commitment to pursue a dissertation project in that laboratory.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses include: advanced physiology (12 hours), graduate colloquium (two hours), graduate seminar (one hour), a teaching practicum (two hours), cell biology (three hours), and research (nine hours).

The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. In addition, the student begins to develop his/her teaching skills. The purposes of the graduate colloquium and seminar are twofold. First, they give students an opportunity to become informed of the latest scientific advances. Secondly students have an opportunity to develop and practice presentation of research seminars. In addition to presentations by faculty and students from the Department of Physiology, faculty members from other departments at WVU and from other institutions are invited to present seminars in the program.

After successful completion of the second academic year, the student takes a two-part qualifying examination. The qualifying examination consists of a comprehensive written examination covering all of the major areas of physiology, followed by a written and oral research design examination. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of doctor of philosophy.

During the third and fourth years, the student may enroll in elective courses. Yearly participation in the teaching practicum provides additional experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research. Results of this effort are presented annually in the graduate colloquium. During these years the student will attend and present papers at national meetings of scientific societies (e.g., American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences). The Ph.D. degree generally can be completed in four or five years.

## **Research and Instruction**

Research areas: Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, muscle, neural, renal, and respiratory physiology.

### **Physiology (PSIO)**

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 hr. lec., 1 hr. lab.

241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and consent. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology.

341. *Physiological Methods 1*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology.

342. *Physiological Methods 1*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology

343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in the Health Sciences Center's basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control. 3 lec., 1 conf., 1 lab.

344. *Medical Physiology 1*. (For medical and a limited number of regular full-time graduate students in the Health Sciences Center's basic sciences departments basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control with clinical correlations. 5 lec., 1 conf.-lab.

345. *Medical Physiology 2*. (For medical and a limited number of regular full-time graduate students in the Health Sciences Center's basic sciences departments.) 5 hr. PR: PSIO 344 and consent of department chairperson. Continuation of PSIO 344. 5 lec., 1 conf.-lab.

346. *Neurophysiology*. (For graduate students in the Health Sciences Center's basic sciences departments and a limited number of regular full-time graduate students.) II. 1-4 hr. PR: MATH 3 or 141, Phys. 1 and 2 or consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 1-3 lec., 1 conf.

350. *Graduate Physiology 1*. (For graduate students in the Health Sciences Center's basic sciences departments and a limited number of other regular full-time graduate students.) I 6 hr. PR: Calculus, college physics, organic chemistry, biology, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control.

351. *Graduate Physiology 2*. (For graduate students in the Health Sciences Center's basic sciences departments and a limited number of other regular full-time graduate students.) II 6 hr. PR: PHYS 344 or 350 and consent of department chairperson. Continuation of PHYS 350.

399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study to designed to develop research skills.

444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate standing and consent. (Graded S / U.)

490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)

491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in; cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.

497. *Research in Physiology*. I, II, S. 1-15 hr.

498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)

499. *Graduate Colloquium*. I, II. 1 hr. PR: Consent. (Graded as S or U.)

# School of Dentistry

Henry J. Bianco, Interim Dean

William R. McCutcheon, Associate Dean

James Overberger, Associate Dean

Frank H. Stevens, Assistant Dean

## **Degrees Offered:**

***D.D.S. in Dentistry***

***M.S. in Dental Specialties***

***M.S. in Dental Hygiene***

***B.S. in Dental Hygiene***

## **Historical Background**

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

## **Mission**

- To provide the people of West Virginia with an oral health center for education, research and service activities;
- To contribute to and improve the dental health of all people, especially the citizens of West Virginia.

The School of Dentistry of West Virginia University offers degrees of doctor of dental surgery, masters of science in dental specialties and dental hygiene, and bachelor of science in dental hygiene. The Department of Oral and Maxillofacial Surgery offers one four-year residency. Seven general practice residencies and three advanced education in general dentistry residencies are also offered. Programs leading to the master of science and doctor of philosophy degrees are available in the associated basic sciences. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

## **Accreditation**

All programs are accredited by the Commission on Dental Accreditation of the American Dental Association.

## **Administration**

Administration of the School of Dentistry is the responsibility of the dean. He is aided in this function by three associate deans, one assistant dean, and the clinical and Health Sciences Center chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the dean in carrying out the established policies of the School of Dentistry and of the University.

## **Dental Clinic**

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene

students include 160 treatment cubicles and all necessary related laboratories. The students treat their assigned patients under close supervision of faculty and receive practical experience while rendering service to thousands of patients annually.

## **Books and Instruments**

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses. All dental students must maintain a library of required textbooks through graduation. Used books, instruments, and equipment are not acceptable.

## **Organizations**

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Research.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Research during the period of enrollment in the School of Dentistry.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*American Association of Women Dentists.* The objectives and purposes of the West Virginia University School of Dentistry Chapter of the American Association of Women Dentists are to offer opportunities for personal growth through association with women in our profession, support the goals of the American Association of Women Dentists, aid in the advancement of women in dentistry, promote professional support and cooperation among its members, and promote the fundamentals of good oral health.

*Academy of Dentistry for the Handicapped.* The Academy of Dentistry for the Handicapped is an international organization for dental students and hygiene students interested in management and treatment of special care patients. Community services are provided by assisting with Special Olympics and presenting disability awareness programs to area grade schools. Guest speakers are sponsored on topics such as: "Managing the Hearing Impaired Patient in the Dental Office," "Use of Restraint in Treating Handicapped Patients," and "Child Abuse and Neglect in Special Needs Children."

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of Dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the

School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

*Dental Fraternities.* Chapters of two national dental fraternities, Delta Sigma Delta and Psi Omega, are active at the School.

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

## Doctor of Dental Surgery Program (D.D.S.)

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants are considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PAT sections of the Dental Admission Test of at least 15–15. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

## Admission Requirements

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements, appropriate completion of all application instructions, submission of all transcripts from each college attended, personal interview, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding initial enrollment).

Application for admission in the fall of 1994 should be made promptly upon completion of the 1992–93 school year, even if the applicant has not completed all the requirements as listed.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisites for admission include:

	Sem. Hr.
English Composition and Rhetoric, or equivalent	6
Zoology or Biology (with laboratory)	8
Inorganic Chemistry (with laboratory)	8
Organic Chemistry (with laboratory)	8
Physics (with laboratory)	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Health Sciences North, P.O. Box 9815, WVU Health Sciences Center, Morgantown, WV 26506-9815. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the fall, is November 1 of the preceding year. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet; applicants should review them carefully. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.

Each applicant is required to complete the Dental Admission Test satisfactorily. The test should be taken in April before making application in June. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Final acceptance of a student is contingent upon satisfactory completion of all requirements.

### **Requirements for the Degree (D.D.S.)**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Trustees for its approval and for the conferring of the degree of doctor of dental surgery (D.D.S.), provided they fully meet the following conditions:

- Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
- Shall have completed the prescribed curriculum for each of the academic sessions.
- Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
- Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

### **Curriculum**

The basic required courses in the curriculum are presented throughout the first seven semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice track, basic biologic science track, specific clinical interest track, and rural practice track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student

prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. In addition to the required courses, fourth-year students are required to register for at least three hours of electives during each semester enrolled.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and, at the same time, they serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairperson and the Associate Dean for Academic Affairs. The student will pursue the approved curriculum through completion of the D.D.S. program.

Additional requirements include participation in mock board examinations by fourth-year students and one week of remote-site training by all students. Furthermore, students must satisfactorily complete all courses that are attempted.

## **Promotion**

At the end of each grading period (i.e., each academic semester or session) all students will have their individual progress reviewed by the academic standards committee convened for their class. The progress of each student in the curriculum is governed by a set of minimum acceptable performance standards upon which the academic standards committee bases its decisions.

The standards consist of three categories: scholastic performance; clinic utilization; and professional development. Scholastic performance requires that each student must earn a specified grade-point average to be promoted to the succeeding year. Clinic utilization requires that each student must utilize a specified percentage of available clinic time to demonstrate steady progress toward attainment of clinical competency. Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the student's personal behavior and patient management.

These performance standards are explained in detail in the "Curriculum and Academic Standards Statement for the WVU School of Dentistry." All first-year students are presented this statement prior to entering school and are required to acknowledge by their signature that they have read and accepted the conditions set by the material contained therein.

At the completion of each academic term, following the Committee on Academic Standards meetings, the status of each student is reported to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, or be suspended or dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the appropriate Committee on Academic Standards and the Dean.

## SCHOOL OF DENTISTRY COURSE SCHEDULE

### First Year

<b>Didactic Courses</b>	<b>Hours</b>	<b>Sem. 1</b>	<b>Sem. 2</b>	<b>S</b>
300 Anesthesiology	1			x
303 Oral Diagnostic Techniques	2			x
304 Operative Dentistry	4		x	
305 General Biochemistry	4		x	
324 Gross Anatomy	7		x	
309 Microanatomy and Organology	5	x		
310 Dental Anatomy and Occlusion	6	x		
311 Periodontics	1			x
312 Dental Materials	3	x		
313 Removable Prosthodontics	3	x		
314 Fixed Prosthodontics	1			x
315 Periodontics	2	x	x	
316 Removable Prosthodontics	1			x
317 Removable Prosthodontics	1			x
318 Oral Histology and Embryology	2	x		
319 Pediatric Dentistry	1		x	
320 Community Dentistry	1	x		
321 Endodontics	2			x
322 Operative Dentistry	2			x

### Second Year Didactic Courses

302 Microbiology	5	x		
323 Clinic Orientation	0	x		
325 Practice Management	1		x	
327 Oral Radiology	1	x		
328 General Pathology	5		x	
329 Operative Dentistry	2	x		
330 Community Dentistry	1		x	
331 Dental Anatomy and Occlusion	2			x
332 Periodontics	1		x	
333 Physical Diagnosis	1		x	
334 Removable Prosthodontics	3	x	x	
335 Pediatric Dentistry	2	x	x	
336 Fixed Prosthodontics	6	x	x	
337 Oral Diagnosis	1		x	
338 Oral Pathology	3		x	x
339 Oral Surgery	1			
340 Periodontics	1	x		
341 Removable Prosthodontics	2			x
342 Periodontics	1	x		
343 Fundamentals of Physiology	5	x		
345 Principles of Orthodontics	1		x	
346 Orthodontic Technics	1			x
348 Operative Dentistry	1			x
349 Hospital Dentistry	1			x

### Second Year Clinical Courses

375 Dental Practice Management	1-3		x	x
376 Removable Prosthodontics	1-6		x	x
377 Periodontics	1-4		x	x
380 Endodontics	1-4		x	x
383 Operative Dentistry	1-8		x	x
384 Oral Surgery	1-3		x	x
386 Pediatric Dentistry	1-5		x	x
387 Clinical Oral Diagnosis	1-3		x	x
389 Fixed Prosthodontics	1-6		x	x
396 Clinical Oral Radiology	1-3		x	x

<b>Third Year Didactic Courses</b>	<b>Hrs.</b>	<b>Sem. 1</b>	<b>Sem. 2</b>	<b>S</b>
347 Management of Medical/Dental Emergencies	1		x	
350 Removable Prosthodontics	1	x		
351 Dental Anatomy & Occlusion	1		x	
352 Community Dentistry	2	x	x	
353 Oral Pathology	2	x		
355 Clinic-Pathologic Correlation Conference	1		x	
356 Removable Prosthodontics	1		x	
357 Fixed Prosthodontics	2	x	x	
358 Operative Dentistry	2			x
359 Oral Surgery	2	x	x	
360 Pharmacology	4	x		
361 Pediatric Dentistry	1	x		
362 Endodontics	1	x		
363 Periodontics	2	x	x	
364 Pain and Anxiety Control	1	x		
365 Orthodontics	1		x	
366 Pediatric Dentistry	1		x	
370 Community Dentistry	1			x
371 Practice Management	2	x		
372 Practice Management	1		x	
373 Practice Management	1			x
374 Principles of Medicine	2	x		
<b>Third Year Clinical Courses</b>				
375 Practice Management	1-3	x	x	x
376 Removable Prosthodontics	1-6	x	x	x
377 Periodontics	1-4	x	x	x
380 Endodontics	1-4	x	x	x
383 Operative Dentistry	1-8	x	x	x
384 Oral Surgery	1-3	x	x	x
385 Orthodontics	1-3	x	x	x
386 Pediatric Dentistry	1-5	x	x	x
387 Clinical Oral Diagnosis	1-3	x	x	x
388 Pediatric Dentistry	1	x	x	x
389 Fixed Prosthodontics	1-6	x	x	x
396 Clinical Oral Radiology	1-3	x	x	x
<b>Fourth Year Clinical Courses</b>				
375 Practice Management	1-3	x	x	
376 Removable Prosthodontics	1-6	x	x	
377 Periodontics	1-4	x	x	
380 Endodontics	1-4	x	x	
383 Operative Dentistry	1-8	x	x	
384 Oral Surgery	1-3	x	x	
385 Orthodontics	1-3	x	x	
386 Pediatric Dentistry	1-5	x	x	
387 Clinical Oral Diagnosis	1-3	x	x	
388 Pediatric Dentistry	1	x	x	
389 Fixed Prosthodontics	1-6	x	x	
394 Community Dentistry	1	x	x	
395 Hospital Dentistry Practicum	2	x	x	
396 Clinical Oral Radiology	1-3	x	x	
391 Special Topics	1-15	x	x	

The relationship of the number of elective and/or required hours during the fourth year may vary with each student depending upon the individual student's progress.

## Courses of Instruction in Dentistry (DENT)

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300—324; second year, 325—349; third year, 350—374; and fourth year, 375—399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Associate Dean for Academic Affairs. All courses offered by the School of Dentistry have either a prefix DENT for dentistry or DTHY for dental hygiene.

### Community Dentistry (DENT)

320. *Community Dentistry*. I. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.

330. *Community Dentistry*. II. 1 hr. Lectures provide the student with a basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.

352. *Community Dentistry*. Yr. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.

370. *Community Dentistry*. S. 1 hr. PR: Consent. Clinical, social, and community health considerations in the oral health care of geriatric patients.

394. *Community Dentistry*. I, II. 1—15 hr. Field experience in various aspects of community health.

### Dental Practice Management (DENT)

325. *Practice Management*. II. 1 hr. A lecture course designed to prepare dental students in the concepts of four-handed dentistry.

371. *Practice Management*. I. 2 hr. PR: Dent. 325. A lecture series on the fundamentals of practice management, including the organization and development of the practice, personnel and financial management, and the introduction to TEAM dentistry.

372. *Practice Management*. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.

373. *Practice Management*. S. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.

375. *Practice Management*. Yr. and S. 1—3 hr. PR: Consent. Clinical practice using auxiliaries, including those trained in expanded functions.

### Endodontics (DENT)

321. *Endodontics*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.

362. *Endodontics*. I. 1 hr. Lectures on rationale, diagnosis, prevention, and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae.

380. *Endodontics*. Yr. and S. 1—4 hr. Clinical endodontic instruction in order to develop the skills and judgment necessary to treat diseases of the dental pulp and their sequelae.

390. *Clinical Endodontics*. I, II, S. 1-5 hr. (May be repeated for credit.) PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.

391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

## **Hospital Dentistry (DENT)**

333. *Physical Diagnosis*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.

347. *Management of Medical/Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.

349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.

374. *Principles of Medicine*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.

395. *Hospital Dentistry Practicum*. I, II. 2 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in DENT 349.

## **Operative Dentistry (DENT)**

304. *Operative Dentistry*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Characteristics and treatment of caries emphasized.

322. *Operative Dentistry*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Certain fundamentals of pedodontics introduced.

329. *Operative Dentistry*. I. 2 hr. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.

348. *Operative Dentistry*. S. 1 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Treatment planning procedure is reviewed and examined.

358. *Operative Dentistry*. S. 2 hr. More complex and advanced techniques for clinical practice with emphasis on new developments throughout the scope of operative dentistry.

383. *Operative Dentistry*. Yr. and S. 2—8 hr. Instruction in the clinic setting includes comprehensive diagnosis and treatment planning, computer assisted records, plaque control, caries control, and single tooth restorations. Sufficient variety and depth of experience occurs to obtain competence for independent practice of operative dentistry.

## **Program in Dental Materials (DENT)**

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

397. *Special Topics*. (Fourth Year.) I and II. 1—3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Oral Diagnostic Services (DENT)**

303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.

323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.

327. *Oral Radiology*. I. 1 hr. The physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.

337. *Oral Diagnosis*. II. 1 hr. Didactic instruction with further application of diagnosis procedures presented in DENT 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.

387. *Clinical Oral Diagnosis*. Yr. and S. 1—3 hr. PR: Consent. Clinical application of principles presented in DENT 303 and 337, providing opportunities for observation and analysis of clinical problems.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

396. *Clinical Oral Radiology*. Yr. and S. 1—3 hr. Clinical application of principles presented in DENT 303 and 327 with additional instruction in techniques and interpretation of radiographs with special emphasis to role played in oral diagnosis.

397. *SMaster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

## **Oral and Maxillofacial Surgery (DENT)**

300. *Anesthesiology*. II and S. 1 hr. Lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.

339. *Oral Surgery*. II. 1 hr. Didactic instruction in basic surgical principles as applied to the extraction of teeth and dentoalveolar surgery.

359. *Oral Surgery*. I and II. 2 hr. PR: Consent. Didactic instruction in patient evaluation, complicated exodontia, preprosthetic surgery, diagnosis, surgical and adjunctive treatment of disease, injuries, and defects of human jaws and associated structures.

364. *Pain and Anxiety Control*. I. 1 hr. PR: Consent. Instruction in the psychology, physiology, and clinical techniques of controlling pain and anxiety in the dental patient.

384. *Oral Surgery*. Yr. and S. 1—3 hr. PR: Consent. Clinical instruction in outpatient and inpatient oral surgery necessary to provide comprehensive care for the dental patient.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

397. *SMAster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### **Oral Pathology (DENT)**

328. *General Pathology*. (For dental and graduate students.) II. 5 hr. PR: Consent. The broad spectrum of human diseases is studied at the clinical, physiological, and biochemical levels.

338. *Oral Pathology*. (For dental students.) II. and S. 3 hr. PR: Consent; PATH 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.

353. *Oral Pathology*. (For dental students.) I. 2 hr. PR: Consent; DENT 338. Continuation of DENT 338.

355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; DENT 338, 353. Interesting oral lesions are demonstrated clinically, radiographically, and histologically. Diagnosis is established and treatment discussed by faculty and students.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

382. *Advanced Oral Histopathology*. (For dental and graduate students, residents, and interns.) I and II. 1 hr. PR: Consent; DENT 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.

397. *SMAster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents, and interns.) I. 1—3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

### **Orthodontics (DENT)**

345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.

346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.

365. *Orthodontics*. II. 1 hr. Introduction to clinical orthodontics; lectures on case analysis, treatment planning, and clinical procedures involved in interceptive, preventive, and adjunctive treatment of malocclusions.

385. *Orthodontics*. Yr. and S. 1—3 hr. Clinical management of selected malocclusion problems.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

397. *SMaster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

## **Pediatric Dentistry (DENT)**

319. *Pediatric Dentistry*. II. 1 hr. PR: Consent. Normal growth and development presented from physical, intellectual, psychological, and oral perspectives. Behavior of children in dental environment reviewed and strategies for management examined.

335. *Pediatric Dentistry*. I and II. 2 hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: oral diagnosis/treatment planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the developing occlusion and trauma to the dentition and oral structures.

361. *Pediatric Dentistry*. I. 1 hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: abnormal dental development, oral habits, and adolescent dentistry.

366. *Developmentally/Medically Compromised Child*. I, II. 2 hr. PR: Consent. Didactic instruction in dentistry for the developmentally disabled and/or medically compromised child.

386. *Pediatric Dentistry*. I, II, S. 1—5 hr. PR: Consent. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.

388. *Pediatric Dentistry*. I, II, S. 1 hr. PR: Consent. Clinic experience in providing comprehensive dental care for the developmentally disabled and medically compromised child.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

397. *SMaster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

## **Periodontics (DENT)**

311. *Periodontics*. S. 1 hr. Introduction to periodontal diseases, their diagnosis and treatment. Laboratory instruction is included.

315. *Periodontics*. II. 2 hr. Study of professional communication and introduction to the theory and practice of preventive dentistry.

332. *Periodontics*. II. 1 hr. Lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition.

340. *Periodontics*. I. 1 hr. Intermediate didactic instruction in periodontal therapy including basic surgery and post-operative care.

342. *Periodontics*. I. 1 hr. PR: Consent. Clinical introduction to the practice of preventive dentistry.

363. *Periodontics*. Yr. 2 hr. Advanced didactic instruction in periodontal therapy including special surgical procedures.

377. *Periodontics*. Yr. and S. 1—4 hr. Clinical experience in the diagnosis and treatment of periodontal diseases.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

397. *SMaster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

### **Fixed Prosthodontics (DENT)**

314. *Fixed Prosthodontics*. S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.

336. *Fixed Prosthodontics*. Yr. 6 hr. PR: Consent. Lectures and laboratory exercises involving principles and technics of crown and bridge prosthodontics. Topics include types of dental bridges, their indications, and contraindications.

357. *Fixed Prosthodontics*. Yr. 2 hr. PR: Consent. Lectures concerned with clinical practice; diagnosis, treatment planning, treatment procedures, ceramics, esthetics, and occlusion.

389. *Fixed Prosthodontics*. Yr. and S. 1—6 hr. PR: Consent. Clinical application of the theory and practice of crown and bridge dentistry.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

### **Maxillofacial Prosthodontics (DENT)**

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. PInvestigation of advanced topics not covered in regularly scheduled courses.

397. *SMaster's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

### **Removable Prosthodontics (DENT)**

313. *Removable Prosthodontics*. I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.

316. *Removable Prosthodontics*. S. 1 hr. Lectures and laboratory practice in maxillomandibular relationships (omandibular and occlusion).

317. *Removable Prosthodontics*. II. 1 hr. PR: Consent. A lecture course providing an introduction to removable partial denture prosthetics.

334. *Removable Prosthodontics*. Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.

341. *Removable Prosthodontics*. S. 2 hr. Clinical demonstrations correlating the didactic

and laboratory practices with the actual treatment of a removable prosthodontic patient.

350. *Removable Prosthodontics*. Yr. 2 hr. Lectures concerned with clinical practice of complete and partial removable prostheses.

356. *Removable Prosthodontics*. II. 1 hr. Lectures in the theory and practice of Maxillofacial Prosthodontics and Implant Dentistry.

376. *Removable Prosthodontics*. Yr. and S. 2—6 hr. Continued application of the theory and practice of removable prosthodontics.

391.B. *Advanced Topics*. (Fourth Year.) I and II. 1-6 hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

397. *Master's Degree Research or Thesis*. I, II, S. 1-15 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project..

## **Advanced Education Programs**

The Departments of Endodontics and Orthodontics offer programs of advanced study leading to the degree of master of science (M.S.). The Department of Oral and Maxillofacial Surgery offers one four-year residency. Seven general practice and three advanced education in general dentistry residencies are also offered. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Graduate Affairs, WVU School of Dentistry, Morgantown, WV 26506.

## **Master of Science with Specialization in Endodontics**

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of master of science (M.S.). The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Graduate Affairs. Applicants will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after December 1.

### **Requirements for Admission to the Endodontic Program**

- Graduation from an accredited school of dentistry.
- Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.

Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

### **Requirements for Degree of Master of Science**

- Fulfillment of general WVU graduate study requirements.
- Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.

- An approved master's thesis based on original research completed during the period of residency in an area related to endodontics. A certificate will be awarded only upon satisfactory completion of the research and thesis.
- Satisfactory completion of a final oral examination.
- Completion of a minimum of 65 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (15 hours).
- Demonstration of satisfactory clinical competency in the student's field.
- Maintenance of a grade level commensurate with graduate education.

### **Dentistry (DENT)**

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### **Endodontics (DENT)**

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.

391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.

490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.

497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

### **Microbiology and Immunology (MBIM)**

317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available. Pathogenic microorganisms, including immunology and antimicrobial agents.

### **Pathology (PATH)**

382. *Oral Histopathology*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.

401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

### **Pharmacology and Toxicology (PCOL)**

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

### **Statistics (STAT)**

311. *Statistical Methods* 1. I, II. 3 hr. PR: MATH 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to ED P 311 and PSYC 311.)

## **Master of Science with Specialization in Orthodontics**

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.). The program generally requires six months (three academic years and two summers) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Graduate Affairs. Those applicants approved for admission to the program will be notified December 1.

### **Requirements for Admission to the Orthodontic Program**

- Graduation from an accredited dental school.
- Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 3.00 is required for admission.
- Each applicant must file with the department all information requested in the department application form.

### **Requirements for Degree of Master of Science**

- Fulfillment of general WVU graduate study requirements.
- Thirty-six months (three academic years and two summers) of residency at the School of Dentistry.
- An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
- Satisfactory passage of a final oral examination.
- Completion of a minimum of 60 credit hours. These include 35 hours of orthodontic courses, a minimum of nine hours of selected basic sciences subjects, a minimum of six hours of elective allied subjects, and a thesis (six hours).
- Demonstration of satisfactory clinical competence in the student's field.
- Maintenance of a grade level commensurate with graduate education.

### **Anatomy (ANAT)**

315. *Advanced Applied Anatomy*. I. 3 hr. PR: Consent. Advanced descriptive and functional anatomy of the head and neck, especially as it relates to orthodontics. The course stresses the oral-facial region, the skullbase, and the architecture of the skull in relation to masticatory forces.

316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: ANAT 315 or consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

## **Orthodontics (DENT)**

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.

417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.

418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.

419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.

420. *Cephalometrics*. S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.

421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: DENT 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.

422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: DENT 421. Continuation of DENT 421 involving more difficult type cases and introducing more sophisticated appliance therapy.

423. *Growth and Development*. II. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.

425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.

426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: DENT 416, 417. Clinical treatment of selected patients.

497. *Research*. I, II, S. 1-15 hr.

## **Pathology (PATH)**

397. *Pediatric Oral Pathology*. I. 2 hr. PR: Consent. Lecture and seminar course on inherited diseases and other pathologic situations of oral cavity and face specific for pediatric age group.

## **Statistics (STAT)**

311. *Statistical Methods 1*. I, II. 3 hr. PR: MATH 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to EDP 311 and PSYC. 311.)

## Dental Hygiene

Dental hygiene, a department of the School of Dentistry, offers a four-year curriculum leading to a B.S. in dental hygiene. The program is, in part, based in the liberal arts, but it is also a thoroughly professional education. The format of the curriculum is not conventional, in that it includes courses from many academic disciplines. The program prepares students through classroom and practical experiences.

### Program Goals

- Preparation of individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers (those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States). Presently these services include: observation, recording, prevention, treatment, education, and communication.
- Preparation of individuals capable of performing the clinical skills delegated to any allied dental personnel (excluding the dental laboratory technician).
- Preparation of dental hygienists to teach clinical skills and didactic information in allied dental education programs.
- Preparation of individuals capable of performing coordinative and administrative functions in public health, hospitals, and community related areas in urban and rural settings.
- Preparation of dental hygienists who have a keen sense of social awareness and personal and professional ethics.
- Preparation of dental hygienists to continue their professional development beyond graduation through continuing education, advanced studies, self study, independent thought, and graduate endeavors.
- Preparation of dental hygienists who have the capability to understand and adapt to new developments and changes in science, technology, and practice of comprehensive health care.
- Provision of an educational foundation for advanced studies.
- Provision of the degree completion option to allow students holding an associates degree/certificate in dental hygiene to obtain a Bachelor of Science in Dental Hygiene.

### Admission

To get application and reference forms, please write to the Department of Dental Hygiene, P.O. Box 9425, West Virginia University, Morgantown, WV 26506-9425, or to the Office of Admissions, Health Sciences Center, P.O. Box 9815, West Virginia University, Morgantown, WV 26506-9815. As soon as possible in the year preceding the year you want to enter the program, you should apply and complete the aptitude tests. Forms for the following year are available in September.

If you have no previous study in higher education, you will apply for admission as a freshman at WVU. You must have a diploma from an accredited high school or preparatory school, and we expect you to have these courses listed on your high school transcript:

English—4 units

Algebra—2 units

Plane geometry—1 unit

Biology—1 unit

Chemistry—1 unit

We pay particular attention to scholastic achievement in science courses.

We also expect applicants to rank in the upper one half of their graduating classes. Physical strength with the ability to sit and stand as required, fine precision bilateral manipulative hand/motor skills, adequate visual acuity, eye/hand/foot coordination and emotional stability are essential characteristics for individuals who wish to enter and continue in the dental hygiene program. They must meet other medical qualifications as required. Reasonable accomodation will be considered for students with special needs.

We require that you take the American College Testing Program examination or the Scholastic Aptitude Test. We ask for personal references, to be submitted on our reference form. All three references must be sent by the writer of the reference directly to the Department of Dental Hygiene. The Dental Hygiene Admissions Committee reviews all applications. If you are among the most qualified, we will invite you to come to the campus for a personal interview. You will receive a letter stating the date, time, and place of an interview. Competition for admission to our program is intense, and we give preference to residents of West Virginia.

### **Degree Completion Program**

If you are a registered dental hygienist, we can admit you directly to the Department of Dental Hygiene as a full-time or as a part-time student. To be eligible for the degree completion program, you must have a certificate or associate degree from an accredited dental hygiene program. You can transfer lower division credits (see "Dental Hygiene Suggested Curricula"). Your acceptance and placement in the program depends upon your academic record and upon the number of spaces available.

When you apply, we ask you to include complete records of previous study. In addition to an official transcript mailed to us by the registrar of your previous school, we ask you to include catalog descriptions of the courses taken. If you are currently enrolled in a certificate or associate degree program, we ask that you include your program of study. You are responsible for the submission of complete records.

You can enter the degree completion program twice a year. Applications can be obtained after September 1 of the year preceding application to the program.

### **Requirements**

To summarize the admission process for the degree completion program:

- Complete the accredited certificate/associate degree program in which you are currently enrolled or offer proof of a previously completed program.
- Present at least a 2.5 grade-point average for all college work attempted. If your grade-point average is below our minimum, you can petition the Dental Hygiene Admissions Committee for special consideration.
- Successfully complete the Dental Hygiene National Board Examination and submit your score.
- Submit two letters of reference, one from the director of your previous program and one from a clinical instructor. If you have professional experience, substitute a letter from your employer for either of the above.

The Admissions Committee may ask you to come for a personal interview before they make a final decision on your application.

## Promotion

At the end of every semester, the Dental Hygiene Committee on Academic Standards reviews the status of every student in the program. The committee recommends promotion or retention to the Dean of the School of Dentistry.

If you fulfill all course requirements and have the necessary grade-point averages, your promotion is unconditional. The necessary grade-point averages for each year are as follows:

Cumulative grade-point average: after first year 1.75 for promotion to second year; 2.0 for promotion to third year; 2.0 for promotion to fourth year and 2.0 for graduation.

Science/Dental Hygiene grade-point averages are the same for yearly promotion.

The Science/Dental Hygiene average is based on grades earned in these courses or their equivalents: Anatomy 101; Biology 2; Chemistry 11, 12; Dentistry 300; Microbiology 26; Pathology 128, 129; Pharmacology and Toxicology 160; Physiology 141; Dental Hygiene 1-220.

If you do not qualify for unconditional promotion, you may be placed on probation. Probationary status means that you are allowed to make up your deficiencies or repeat the year. If, after repeating the year, you do not reach the minimum grade-point standard, the committee will reevaluate your status and potential.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Dental Hygiene Suggested Curricula

### First Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
ORIN 2	1	BIOL 2	3
ENGL 1	3	BIOL 4	1
Cluster A	3	CHEM 12	4
DTHY 66 <i>Tech Literature</i>	1	DTHY 85 <i>Oral Anatomy</i>	3
MATH 3	3	HN&F 71 <i>Intro. Nutrition</i>	3
CHEM 11	4	Cluster B (SOCA 1)	<u>3</u>
DTHY 1	<u>2</u>		17
	17		

### Second Year

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
ANAT 101	4	PSIO 141	4
Cluster B (Psych. 1)	3	DTHY 90 <i>Oral Histology</i>	3
DTHY 105		PCOL 160	3
<i>Theory &amp; Pract. of Prevent.</i>	2	DTHY 125 <i>Dent.Hy. Technics</i>	4
MBIM 26	4	ENGL 2	3
Cluster A	3	DTHY 120 <i>Dent. Nrsg. Technics</i>	<u>1</u>
SPA 80	<u>3</u>		18
	19		

### Third Year

First Semester	Hrs.	Second Semester	Hrs.
DTHY 168 <i>Periodont. 1</i>	1	DTHY 169 <i>Periodont. 2</i>	2
Cluster B (PSYC 141)	3	DTHY 174 <i>Teaching Methods</i>	2
PATH 128	2	PATH 129	3
DTHY 152 <i>Dent. Radiol.</i>	2	DTHY 161 <i>Expanded Functions</i>	2
ANES 300	1	Cluster A	3
DTHY 172 <i>Public Health</i>	2	DTHY 150 <i>Dent. Health Ed.</i>	3
DTHY 160 <i>Dent. Materials</i>	3	DTHY 164 <i>Clin. Dent. Hy.</i>	2
DTHY 162 <i>Clin. Methods</i>	2		17
DTHY 163 <i>Clin. Dent. Hy.</i>	2		
	18		

### Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
DTHY 204 <i>Adv. Clin. Meth.</i>	1	DTHY 206 <i>Adv. Clin. Dent. Hyg.</i>	3-4
DTHY 205 <i>Adv. Clin. DH</i>	5	DTHY 207 <i>Adv. Dent Hyg. Clin Meth</i>	1
DTHY 202 <i>Dent. Hy. Pract.</i>	2	DTHY 220 <i>Dent. Health Ed. III</i>	2
Cluster B	3	DTHY 220 <i>Clin. Did Sem</i>	2
Cluster A	3		
DTHY 220 <i>Dent. Health Ed. II</i>	2		

DH Elect. 6-7 hours elective credits in Dental Hygiene during the fourth year.

## Dental Hygiene (DTHY)

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this catalog or the *WVU Undergraduate Catalog*.)

1. *Orientation to Dental Hygiene*. I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.

66. *Technical Expression and Dental Literature*. I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.

85. *Oral Anatomy*. II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.

90. *Oral Histology*. II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.

105. *The Theory and Practice of Prevention*. I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.

120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office

125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.

150. *Dental Health Education*. II. 3 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.

152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.

160. *Dental Materials*. I. 3 hr. PR: Enrollment in dental hygiene. Lecture and laboratory covering the science and manipulation of dental materials. (2 hr. lec., 4 hr. lab.)

161. *Expanded Functions*. II. 2 hr. PR: DTHY160. Lecture and laboratory covering specialty topics in dentistry for expanded functions, four handed dental assisting, and the placing and carving of amalgam and resin restorations in dentiform teeth. (1 hr. lec., 4 hr. lab.)

162. *Dental Hygiene Clinical Methods*. I. 2 hr. PR: DTHY 125. Principles of oral prophylaxis, instruction in the care of special patients, use of diagnostic aids, and nutritional counseling. (2 hr. lec.)

163. *Clinical Dental Hygiene 1*. I. 2 hr. PR: DTHY 125. Clinical application of dental hygiene principles and techniques. (2 hr. lab.)

164. *Clinical Dental Hygiene 2*. II. 2 hr. PR: DTHY 162, 163. Clinical application of dental hygiene principles and techniques. (8 hr. lab.)

168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.

169. *Periodontics*. II. 2 hr. PR: DTHY 168. A sequential course to DTHY 168.

172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.

174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.

202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.

204. *Advanced Dental Hygiene Methods*. I. 1 hr. PR: Senior enrollment in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings. (1 hr. lec.)

205. *Advanced Clinical Dental Hygiene 1*. I. 5 hr. PR: Senior enrollment in dental hygiene. Clinical experience in traditional and expanded duties; pre- and post-operative care of surgical patients, and radiology. (20 hr. clinic.)

206. *Advanced Clinical Dental Hygiene 2*. II. 3-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures. (12-16 hr. clinic.)

207. *Advanced Dental Hygiene Methods*. II. 1 Hr. PR: Senior enrollment in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings.

220. *Special Topics in Dental Hygiene*. I, II. 1-2 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

## **Master of Science Major in Dental Hygiene**

### **Areas of Emphasis**

Office Management

Special Patients

Educational Administration

Basic Sciences

The School of Dentistry and its Department of Dental Hygiene offer a program of advanced study and specialized training leading to the degree of master of science. This program requires a minimum of 36 semester hours through full-time or part-time enrollment in the School of Dentistry. It is designed to qualify dental hygienists for careers in teaching, administration, research and management.

Options for concurrent masters degrees in the areas of community health or public administration are also available.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Research and Graduate Affairs, School of Dentistry. Applications should be filed by July 1 for fall admission and by November 1 for spring enrollment.

### **Admission Requirements**

- Graduation with a baccalaureate degree in dental hygiene from an accredited dental hygiene program or graduation with a baccalaureate degree in another field of study from an approved institution of higher education while holding a certificate or associate degree in dental hygiene from a program fully accredited by the American Dental Association Commission on Dental Accreditation

- Evidence of scholastic and clinical achievement to indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 2.5 or above is required

- Completion of one of these standardized tests: the Graduate Record Examination (GRE) general aptitude test with a score of 1,000 or above, or the Miller's Analogy Test with a score of 50 or above

- Submission of all information requested in the graduate application to the Office of the Associate Dean.

### **Degree Requirements**

- Completion of a minimum of 36 semester credit hours: 23 required credit hours and 13 credit hours in an elective area(s) of dental hygiene specialization. Four elective areas of specialization are offered. The student may choose one or two of these areas of study. Courses within these specializations are taught by a number of schools within the University. An individualized program will be devised for each student with a maximum of six hours in research leading to an acceptable thesis. Oral defense of the thesis is required.

- Achievement of a 3.0 GPA or an overall academic average of at least B in all work attempted in the master's program. A grade of C or below in two courses will require a faculty review of the student's progress. A third C will result in suspension from the program.

- Removal of all conditions, deficiencies and incomplete grades. Credit hours for courses with a grade lower than C do not count toward degree requirements.

## M.S. Curriculum

	Credit Hours
ED P 311 <i>Statistical Methods</i> .....	3
ED P 330 <i>Foundations of Educational Measurement</i> .....	3
DTHY 380 <i>Seminar Critical Issues in Health Care</i> .....	3
DTHY 381 <i>Seminar Expanded Functions</i> .....	3
DENT 397 <i>Microcomputing for the D.H.</i> .....	2
DTHY 385 <i>Research Methods for the D.H.</i> .....	3
DTHY 397 <i>Research (Thesis)</i> .....	6
Total .....	23
Elective Area(s) of Dental Hygiene Specialization .....	13
Dental Hygiene 391 and Dentistry 397 courses	
Courses offered by the Colleges of Business and Economics and Human Resources and Education, the School of Medicine's Department of Community Health, and the multidisciplinary studies program.	
Total .....	36

## Dental Hygiene (DTHY)

380. *Dental Hygiene Seminar and Practice 1*. I. 3 hr. PR: Graduate standing and consent. Examination of the critical environmental issues affecting the future of health care; particular impact on oral health care trends will form major focus. Dental hygiene clinical practice is also included.

381. *Dental Hygiene Seminar and Practice 2*. II. 3 hr. PR: DTHY 380. Expanded services for the dental hygienist with emphasis on restorative and periodontal functions.

385. *Research Methods for the Dental Hygienist*. II. 3 hr. PR: ED P 311. Methods and techniques of research in dental hygiene. Major emphasis on planning and evaluating health programs, conducting oral health surveys, designing experiments and critically analyzing research results.

397. *Research*. I, II, S. 3-6 hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project.

## Dentistry (DENT)

397. *Special Topics: Microcomputers in Dentistry*. I, II. 2 hr. PR: Consent. Introduction to microcomputing with hands-on experiences in patient recordkeeping, accounting, insurance handling, and word processing.

## School of Medicine

Robert D'Alessandri, Dean

John F. Brick, Associate Dean, Hospital Affairs

Anthony DiBartolomeo, Associate Dean, Clinical Affairs

Norman D. Ferrari, Associate Dean, Ambulatory Services

James K. Hackett, Associate Dean, Finance and Administration

George A. Hedge, Associate Dean, Research and Graduate Studies

Michael J. Lewis, Associate Dean, Charleston Division

James M. Shumway, Jr., Associate Dean, Educational Programs

James Stevenson, Associate Dean, Development and Continuing Medical Education

John W. Traubert, Associate Dean, Student and Curricular Affairs

### ***Degrees Offered:***

***M.D. in Medicine***

***M.S., Ph.D. in Anatomy***

***M.S., Ph.D. in Biochemistry (Medical)***

***M.S., Ph.D. in Microbiology and Immunology***

***M.S., Ph.D. in Pharmacology and Toxicology***

***M.S., Ph.D. in Physiology (Medical)***

***B.S. in Physical Therapy***

***B.S., M.S. in Medical Technology***

### **Historical Background**

The West Virginia University School of Medicine started in 1902 as an affiliate with the College of Physicians and Surgeons of Baltimore. In 1912, the School of Medicine had its formal beginnings as an independent school offering the first two years of basic sciences medical curriculum. The clinical years were completed at another institution. The School of Medicine moved to the current Health Sciences Center in 1957 and inaugurated the four year curriculum in 1960, which coincided with the opening of the 550 bed University Hospital. The first M.D. degrees were awarded to 15 students in 1962.

In 1945 the School of Medicine began a course of study leading to a bachelor of science in medical technology. The first graduates were awarded a combined degree by the School of Medicine and the College of Arts and Sciences. The program of medical technology in the School of Medicine was established in 1961.

The Division of Physical Therapy accepted its first class of 16 students in 1970. It offers the final two years of a baccalaureate program leading to the degree of bachelor of science in physical therapy.

In 1972 the Charleston Area Medical Center became affiliated with West Virginia University. This resulted in the West Virginia University Health Sciences Center—Charleston Division which offers a variety of third and fourth year clerkships for medical students. Approximately one third of each class go to Charleston for the third and fourth years of medical education.

The Wheeling Division of the West Virginia University Health Sciences Center was established in 1974 and offers a variety of elective opportunities for students in the fourth year.

## Facilities

The West Virginia University Health Sciences Center has excellent clinical facilities. The Ruby Memorial Hospital offers the most sophisticated medical technology available, including magnetic resonance imagery, lithotripsy, laser surgery, and the necessary support technology. The Chestnut Ridge Psychiatric Hospital allows the entire spectrum of psychiatric and behavioral problems to be managed. The Mary Babb Randolph Regional Cancer Center, completed in 1990, will provide a facility totally dedicated to the diagnosis and treatment of cancer. Dedicated research and teaching space will allow outstanding cancer scientists to work toward the goals of prevention and cure. Areas of cellular biology, immunology monoclonal antibody, gene tracking, and recombination research are ongoing at the Cancer Center.

Mountainview Regional Rehabilitation Hospital, a sixty bed inpatient center, offers students the opportunity to investigate rehabilitative and physical medicine as a career. The Department of Occupational Medicine has recently evolved, which complements all of the other existing programs.

## Degree Programs

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

The M.D.-Ph.D. program is available to those students who show exceptional interest and scholarly promise. All of the admission requirements of the School of Medicine and the specific graduate program apply. It is recommended that students apply for the combined degree program after the completion of the first year of medical school. It is to be understood that the following information applies only to students in the School of Medicine who are enrolled in the prescribed curriculum which culminates in the M.D. degree. All other students, undergraduates, or graduates enrolled in other programs in the School of Medicine are governed by the policies found elsewhere in the *Health Sciences Center Catalog*.

## Accreditation

The West Virginia University School of Medicine is accredited by the Liaison Committee on Medical Education (L.C.M.E.).

## Admission Requirements

The student preparing for any career in the health professions must have a keen interest in the sciences. Science courses taken in high school should include as many biology, chemistry and physics courses as possible. A good background in mathematics is strongly recommended.

The following courses are required for consideration of an application to Medical School.

English	6 semester hours or equiv.
Biological Sciences (with lab)	8 semester hours or equiv.
Inorganic Chemistry (with lab)	8 semester hours or equiv.
Organic chemistry (with lab)	8 semester hours or equiv.
Physics (with lab)	8 semester hours or equiv.
Social or Behavioral Sciences	6 semester hours or equiv.

Calculus, biochemistry, and cell biology are recommended. A total of 90 semester hours, exclusive of ROTC and general physical education, is required. All required courses must be passed with a grade of C or better.

An excess of credit hours or higher degrees does little to offset the disadvantage of low grades when being considered for admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Admissions Committee.

### **Pre-Admission Tests**

The scores of the Medical College Admissions Test (MCAT) are one of the factors used by the admissions committee in considering an applicant for admission. The MCAT must be taken within two years of applying to medical school. It is recommended that students take the MCAT during the spring of their junior year in college. This allows for a repeat examination in the fall if necessary. Waiting until fall to take the test could jeopardize an applicant's opportunity since no application for admission is given final consideration until MCAT scores are received by the Admissions Committee. The MCAT score must be recorded prior to closing of admissions on December 1.

Information concerning the time and place of the test can be obtained from your premedical advisor or committee or the Office of Admissions and Records.

### **Application Procedure**

The admission process is initiated by completing the American Medical College Application Service (AMCAS) forms. AMCAS packets may be obtained from the Office of Admissions and Records of the West Virginia University Health Sciences Center, or through most preprofessional advising offices.

Application for admission in August, 1994 should be made at the end of the 1992-93 school year. The last date for filing an application is December 1. The applicant should file as early as possible making certain that recent MCAT scores, current transcripts, and letters of recommendation are available to the Admissions Committee.

Preference in admission is given to West Virginia residents and those non-resident applicants who have strong ties to the state. No one specific factor is used to determine admission. However, careful consideration is given to those personal qualifications which apply to the study and practice of medicine. The criteria for admission include academic performance, course load, letters of recommendation, MCAT scores, motivation, interpersonal skills, and a personal interview.

No applicant is admitted before an interview by the Admissions Committee. All residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Admissions Committee, who notify the applicant of the time and place of the interview. Interviews and consideration of applicants begin in September.

If an applicant is denied admission or does not enroll after acceptance, he/she must reapply in the regular manner for consideration in a subsequent year.

## **Advanced Standing**

Advanced standing positions are offered only in very exceptional circumstances and only to students currently attending L.C.M.E. accredited medical schools. A request for transfer is usually considered during the second year. The application must be received no later than May 15. The applicant must present certification of good standing in the school from which he/she is transferring. An official transcript of all prior medical school work is required from all medical schools attended. In addition, the results of Part I of the National Board of Medical Examiners must be available before an application can be finalized.

## **Conditions Following Acceptance**

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Admissions Committee.

The student must be aware that furnishing or causing to be furnished false or incorrect information for the purpose of the School of Medicine application constitutes grounds for disciplinary actions, including, but not limited to, expulsion or revocation of the acceptance.

Students in the School of Medicine agree to abide by the provision of an integrity code, which requires ethical and moral standards of conduct in all situations. Each student is required to return a signed statement to the Office of Student and Curricular Affairs, indicating the student has read and understands the student Professional and Academic Integrity Code of the West Virginia University School of Medicine. The code and copies of the statement are available in the Office of Student and Curricular Affairs in the School of Medicine.

Prior to matriculation, all students must complete certain prescribed immunization and diagnostic procedures.

## **Graduation Requirements**

### **Promotion Procedures (Evaluation of Student Progress)**

Detailed requirements and policies for evaluation of student progress and graduation may be found in the "Policy on Academic and Professional Standards Governing the M.D. Degree Program at West Virginia University School of Medicine."

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the Committee, the student's overall performance does not meet the academic/professional standards of the School of Medicine.

No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

All courses and all classes at the School of Medicine are graded as Honors (H), Satisfactory (S), or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The H, S, and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

Readmission of a dismissed student is the prerogative of the Admissions Committee after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

All nondisciplinary matters are governed by the concept of academic due process.

Upon concurrent recommendation of the Admissions Committee, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession. In all other matters, due process principles shall apply. For further information the reader is referred to *The Policy on Academic and Professional Standards Governing the M.D. Degree Program at West Virginia University School of Medicine*, which is available at the School of Medicine Office of Student and Curricular Affairs.

It is the policy of the School of Medicine that the departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. In addition to the departmental examinations, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion.

All students who have a health problem which they feel may be causing difficulty with their academic progress are strongly advised to notify the Associate Dean for Student and Curricular Affairs.

## **Grade Requirements**

A grade of Honors (H), Satisfactory (S), or Unsatisfactory (U) is recorded for each course. The grade of Incomplete (I) is given when the instructor believes that the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work

before the end of the next semester in which the student is in residence, it becomes a failure (unsatisfactory) unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule). It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses. In addition, each department files in the Office of the Associate Dean for Student and Curricular Affairs a narrative evaluation of the work of each student.

## **Special Requirements**

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the United States Medical Licensing Examination (USMLE) is the mechanism by which a license may be obtained. The examination is given in three separate steps.

Step I is offered at the end of the second year of medical school. The student is encouraged to take the Step I as a candidate for National Board certification at that time. Ordinarily, students should take Step II in September of their fourth year. Under special circumstances, third year students may take Step II in April of their third year even though they will not have completed all of their clinical clerkships. In the event that there is a question about when to take Step II, the student is advised to contact the Office of Student and Curricular Affairs in the School of Medicine. Step II of the USMLE is required as a comprehensive test in clinical sciences and must be taken before graduation.

The overall performance of the student on the USMLE will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

## **Departure from Scheduled Work**

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Director of Admissions and Records, Health Sciences Center, for record. The Office of Student and Curricular Affairs in the School of Medicine must also be notified.

Interruption of academic work must be approved by the Office of Student and Curricular Affairs.

## **Curriculum**

The field of medicine is rapidly changing. The following curriculum outline is the plan that is presently in place. However, the medical school curriculum at West Virginia University will change as needs dictate.

## **First and Second Years**

The curriculum in medical school can be divided into two phases. The first two years are devoted largely to the basic sciences, including anatomy, biochemistry, physiology, microbiology, pathology, and pharmacology. There is an Introduction to Clinical Medicine course during the second year, as well as courses in Behavioral Science and Genetics. See the Medicine I and Medicine II charts for representative schedules.

## **Clinical Years**

The last two years of study take place in the clinics and hospitals where students have the opportunity to help diagnose and treat patients under supervision of the full-time faculty and staff. All students will serve a significant portion of the clinical years training at an off campus or rural site.

## **Third Year**

The third year is structured and the student must spend a designated period of time in each of the major clinical disciplines. This gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students are selected during their first year to spend the third and fourth year at the Charleston Division of WVU Health Sciences Center.

## **Fourth Year**

The fourth year is a partially structured and partially elective year. Each student works with an adviser to select the program best suited to the individual's abilities and goals. The courses selected are subject to the approval of the Associate Dean in the Office of Student and Curricular Affairs.

Four months of the senior year are committed to required clerkships which include Internal Medicine or Pediatric Sub-Internship; Critical Care/Anesthesia; Surgical Sub-specialties; and Primary Care. The remainder of the senior year is elective.

Six months of the senior year must be spent at clinical sites on the campuses at Morgantown and Charleston, or at approved teaching sites throughout West Virginia. Rural rotations are required of all students. A catalog is available from the Office of Student and Curricular Affairs that lists the approved electives.

Students interested in other extramural opportunities are advised to consult with the fourth-year curriculum coordinator in the Office of Student and Curricular Affairs. Elective time must be spent in L.C.M.E. (Liaison Committee on Medical Education) or JCAH (Joint Council of American Hospitals) accredited institutions. Foreign rotations, regardless of sponsorship, are limited to four weeks credit.

Every fourth-year student has the opportunity for four weeks of vacation. The student may alternatively choose a clinical exercise for vacation time.

### **Committees (Chairpersons)**

Academic Standards: Gunter N. Franz.

Biomedical Research Support: Gregory W. Konat.

Dean's Committee to Clarksburg VA Hospital: Robert M. D'Alessandri.

Curriculum Committee: James M. Shumway, Jr..

Executive Faculty: Robert M. D'Alessandri.

Educational Advisory: Robert M. D'Alessandri.

Faculty Promotion: C. Robert Craig.

Medical School-Hospital Liaison to Student Body: Robert M. D'Alessandri.

Admissions Committee: David S. Hall.

E. J. Van Liere Student Research Convocation: Wilbert E. Gladfelter.

Continuing Medical Education: James M. Stevenson.

Admissions Committee for Medical Technology: Frances B. Juriga.

Admissions Committee for Physical Therapy: Marybeth Harris and John Petronis.

First Semester		Second Semester	
Hours	Weeks 5 10 15	Hours	Weeks 5 10 15
4	Physiology	4	Neurobiology
8		8	
12	Gross Anatomy	12	Microanatomy
16		16	
20	Biochemistry	20	Physiology
24		24	
28	Elective and Study Time	24	Epidemiology & Statistics Behavioral Medicine & Psychiatry
32		28	
36		32	Elective and Study Time
		36	

### Medicine I

First Semester		Second Semester	
Hours	Weeks 5 10 15	Hours	Weeks 5 10 15
4	Pathology	4	Pathology
8		8	
12	Microbiology	12	Pharmacology and Toxicology
16		16	
20	Behavioral Med & Psychiatry	20	Genetics
24		24	
28	Introduction to Clinical Medicine	24	Community Medicine
32		28	
36	Elective and Study Time	32	Elective and Study Time
		36	

### Medicine II

## Weeks

12	Medicine
12	Surgery With two weeks of Neurology
6	Behavioral Medicine and Psychiatry
6	Obstetrics and Gynecology
6	Pediatrics
6	Ambulatory Medicine—Family Practice Includes Rural Rotation
48	Total

## Medicine III Clerkships

### Courses of Instruction

#### Anesthesiology (ANES)

301. *Basic Sciences Applied to Anesthesia*—Medicine I and II. 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)

331. *Clinical Clerkship in Anesthesiology/Acute Medicine*. (Third Year.) CR.

A. Lectures to Third-Year Students on Topics Related to Anesthesiology.

B. Clinical Clerkship in Acute Medicine. Preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology, toxicology, fluid and blood therapy, and pain management. Seminars and practical exercises in emergency cardiac life support clinical experience in ICU or OR. (Duration: 2 weeks.)

399. *Selective Experiences in Anesthesiology*. (Fourth Year.) CR. (See Conjoined Courses.)

#### Behavioral Medicine and Psychiatry (BMP)

311. *Introductory Psychiatry*. (First Year.) II. 2 hr. An examination of normal psychological development; consideration of the doctor-patient relationship and physician impairment. A preceptor model is used to introduce the patient to interviewing, emphasizing the mental status examination.

321. *Introductory Psychiatry*. (Second Year.) I. 2 hr. Continuation of BMP 311 with an in-depth look at basic science and social science paramaters in psychiatry. Major clinical syndromes along with biological and environmental concomitants are presented. Advanced psychiatric interviewing is the focus of the preceptorship.

341. *Clinical Clerkship in Psychiatry*. (Third Year.) CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry, and participation and treatment of psychiatric disorders. Emergency Room responsibility.

399. *Selected Experiences in Behavioral Medicine and Psychiatry*. (Fourth Year.) (See Conjoined Courses.)

### **Community Medicine (CMED)**

311. *Methods of Biostatistics*. I. 3 hr. PR: MATH 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $X^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (Equiv. to STAT 311.)

312. *Community Medicine*. (Second Year.) II. 2 hr. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental, and occupational factors. The organization of public health and medical care.

322. *Epidemiology and Biostatistics*. (First Year.) II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomena as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

391. *Advanced Topics*. 1-6 hr. PR: Consent.

399. *Critical Review of Literature*. I & II. 1 hr. PR: MD or Consent. A review of current literature in occupational and environmental medicine, focused on analysis of validity and procedures followed; scrutiny of research reports, their design, methodology, data handling, documentation, and discussion of the data base. 1 hr. conf.

401. *Law and the Workplace*. SI. 1 hr. PR: MD degree, graduate standing, or consent. Philosophy, content, and procedures of current judicial bodies relevant to the practice of medicine in the industrial society, developed through a series of lectures followed by extensive discussion involving students from different curricular backgrounds. 1 hr. sem.

412. *Medical Aspects of Environmental Health*. I & II. 1 hr. PR: MD degree or consent. A review of issues illustrating the responsibilities and professional interaction of physicians in identifying, managing, and preventing casualties from environmental causes in air, water, soil, food, pesticides, and related subjects. 1 hr. lec.

491. *Advanced Study*. 1 hr. PR: Consent.

496. *Seminar in Occupational Medicine*. I & II. 2 hr. PR: MD degree or consent. Current topics in occupational medicine practice, diagnostic, managerial, preventive, and epidemiological aspects, reviewed in a format of clinical discussion; multidisciplinary approach to clinical problems.

497. *Research in Occupational Medicine*. I & II. Variable credit. PR: Consent. Exercises in investigational medicine, illustrating the requirements and procedures relevant to the description and quantification of current issues in occupational medical practice.

### **Conjoined Courses (CC MD)**

399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of the medical curriculum. (Graded as S, or U.) A one-month rotation in primary care, critical care, surgical subspecialty, and either a medicine or a pediatric subinternship are all required in the fourth year. The student works with an adviser to select the remainder of the individual program. This program must also be approved by the associate dean in the office of student and curricular affairs. The year is composed of ten one-month blocks, six months of which must be spent in programs in West Virginia. Selections are available in all departments within the School of Medicine. A catalog is available that lists the specific guidelines for the fourth-year curriculum.

## **Family Medicine (FMED)**

399. *Selected Experiences in Family Medicine.* (Fourth Year.) (See Conjoined Courses.)

## **Medicine (MED)**

321. *Physical Diagnosis—Introduction to Medicine.* I, II. 5 hr. PR: Consent. Examination of normal subjects. Clinical concepts and practical experience in history taking and physical examination.

331. *Clinical Clerkship in Medicine.* (Third Year.) CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient and outpatient service at West Virginia University Health Science Center or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the departments. Clerkship in medicine occupies 12 weeks.

370. *Medical Genetics.* II. 2-4 hr. PR: Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as GEN 370, PEDI 370, CCMD 370.)

## **Neurological Surgery**

### **Neurology (NEUR)**

341. *Clinical Clerkship in Neurology.* (Third Year.) CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.

### **Obstetrics and Gynecology (OBST)**

341. *Clinical Clerkship in Obstetrics and Gynecology.* (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students participate in the care of all inpatients and attend all departmental clinics.

## **Occupational Medicine and Environmental Health**

### **Ophthalmology (OPHT)**

### **Orthopedic Surgery (ORTH)**

### **Otolaryngology (OTOL)**

## **Pediatrics (PEDI)**

331. *Clinical Clerkship in Pediatrics*. (Third Year.) CR. Required of third-year medical students. See description of clinical clerkship under MED 331. Clerkship in Pediatrics occupies 6 weeks.

370. *Medical Genetics*. II. 2-4 hr. PR: Second-year Medical student standing; graduate student in Genetics and Developmental Biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as CCMD 370, GEN 370, MED 370.)

## **Radiology (RAD)**

## **Surgery (SURG)**

341. *Clinical Clerkship in Surgery*. (Third Year.) CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of housestaff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.

399. *Selected Experiences in Surgery*. (Fourth Year.) (See Conjoined Courses.)

## **Urology (UROL)**

# Medical Technology Program

Jean D. Holter, Director

## **Degrees Offered:**

**Bachelor of Science**

**Master of Science**

## **Introduction**

The WVU School of Medicine admitted the first medical technology students in the 1945-1946 academic year. In 1987, the program started a part-time curriculum, a refresher curriculum, and a career-laddering mechanism with Allegany Community College, West Virginia Northern Community College, and Fairmont State College.

The primary aim of the undergraduate medical technology program is to provide a strong educational background in the clinical laboratory sciences.

The purposes are:

- To provide a program that meets the academic standards of the University;
- To provide medical technologists for hospitals, public health, and research laboratories;
- To prepare medical technologists for teaching and supervisory positions;
- To provide an educational background accepted for graduate work.

The primary purpose of the graduate program in medical technology is to prepare students as supervisors of hospital clinical laboratories, to teach a specific laboratory area, and to direct a medical technology program.

Ruby Memorial Hospital is the primary teaching hospital for the medical technology program. Students may be required to fulfill part of their clinical rotations at extramural sites in West Virginia.

The medical technology program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association. The present accreditation, for five years, will be reviewed in 1995.

## **Admission Requirements**

### **Premedical Technology**

Admission requirements for the first year (premedical technology) are the same as those for the College of Arts and Sciences

### **Medical Technology Program**

Admission to the medical technology program includes course requirements, grade-point average, a personal interview, letters of recommendation, and the Allied Health Professions Admissions Test (AHPAT).

The prerequisite course requirements are:

English: six hours of composition and rhetoric (ENGL 1 and 2)

Biology: eight hours of general biology (BIOL1, 2, 3 and 4)

Chemistry: 12 hours: eight hours of inorganic chemistry (CHEM 15 and 16) and four hours of organic chemistry (CHEM 131)\*

Physics: eight hours of general physics (PHYS 1 and 2)

Mathematics: six hours; minimal requirements are college algebra and trigonometry (MATH 3 and 4)

\*Transfer students must complete an organic chemistry course(s) (8 hours) that includes aliphatic and aromatic compounds. The course must include a laboratory. Any student not completing CHEM 131 must take CHEM 133 and 135, 134 and 136, or an equivalent.

Liberal Studies Program: 21-24 hours of electives; 12 hours each of Cluster A and Cluster B

Applicants should have a minimum grade-point average of 2.5 (cumulative and science). Applicants may be admitted on probation if their grade-point average (cumulative or science) is less than 2.5. Applicants with less than a 2.0 grade-point average, either cumulative or science, will not be admitted. A grade-point average of 2.5 or above does not necessarily assure admission.

A personal interview with the Medical Technology Admission Committee is required.

Two letters of recommendation from instructors in physics, chemistry or biology are required.

Allied Health Professions Admissions Test must be taken prior to applying to the Medical Technology Program. Testing is available at WVU in November and January. Further information can be obtained from the Medical Technology Program Office.

Admission of international students is in compliance with West Virginia University regulations. At least one science course (chemistry, physics, or biology) must be completed at an institution of higher education in the United States.

## **Application Procedure**

Application forms for admission to the professional program are available after December 1 from the Office of the Assistant Director of Admissions and Records, West Virginia University Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815. There is an application fee of \$10.00. The priority date for returning the application form is January 15. The deadline date is February 1 if the student expects to enter the program the next fall semester.

Students at West Virginia University or Potomac State College are not transferred automatically from the preprofessional course to the professional course. Students are selectively admitted to the program.

## **Certification**

Graduates from the medical technology program at West Virginia University are eligible to take national examinations for certification as medical technologists or clinical laboratory scientists. These examinations are conducted by national certification agencies such as American Society of Clinical Pathologists and the National Certification Agency. Many institutions require certification for employment.

## **Graduation Requirements/Junior Year**

A student must maintain a grade-point average of 2.0 for each semester to be advanced to the senior year. Any student having one or more F's in a semester or more than one D at the end of the junior year will be suspended from the program. The Academic and Professional Standards Committee must recommend any student for advancement to the senior year. A satisfactory grade-point average does not assure advancement.

\* Electives from Cluster A and Cluster B are to be selected to meet the Liberal Studies Program requirements.

\*\*MTEC 1 is not a required subject. It is highly recommended that all students take this course. MTEC 1 is offered each semester.

## Senior Year

A student must maintain a grade-point average of 2.0 for each semester of the senior year. Graduation requires satisfactory completion of all academic work. Graduation requires the recommendation of the faculty of the School of Medicine.

### Curriculum Plan

#### PRE-MEDICAL TECHNOLOGY

##### First Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 15—Inorganic	4	CHEM 16—Inorganic	4
Elective*	3	ENGL 1—Comp. & Rhet	3
MATH 3 Algebra	3	MATH 4 Trigonometry	3
BIOL 1 & 3	4	BIOL 2 & 4	<u>4</u>
MTEC 1** <i>Orientation</i>	<u>2</u>		14
	16		

##### Second Year

First Semester	Hrs.	Second Semester	Hrs.
Electives*	9	CHEM 131—Organic	4
PHYS 1	4	Electives*	6-9
ENGL 2 Comp. & Rhet.	<u>3</u>	PHYS 2	<u>4</u>
	16		14-17

#### MEDICAL TECHNOLOGY

##### Third Year (Medical Technology 1)

First Semester	Hrs.	Second Semester	Hrs.
MTEC 100	4	MBIO 224	1
MTEC 202	2	MBIO 223	5
BIOC 139	5	MTEC 101	4
PHYS 241	4	MTEC 210	1
Elective	3	MTEC 291	<u>2</u>
MTEC 229	<u>1</u>		13
	18		

##### Fourth Year (MEDICAL TECHNOLOGY II)

Students receive didactic and clinical instruction in the WVU Hospitals, Inc. laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. If the student has excessive absences during the senior year, competencies not completed must be made up during the summer sessions.

Students register for the following courses during the three semesters of study.

	Hours
MTEC 200 <i>Orientation</i>	No Credit
MTEC 220 <i>Immunohematology and Blood Banking</i>	2
MTEC 221 <i>Immunohematology and Blood Banking Laboratory</i>	5
MTEC 230 <i>Clinical Chemistry</i>	2
MTEC 231 <i>Clinical Chemistry Laboratory</i>	5
MTEC 240 <i>Clinical Hematology</i>	2
MTEC 241 <i>Clinical Hematology Laboratory</i>	5
MTEC 250 <i>Clinical Microbiology</i>	2

MTEC 251 <i>Clinical Microbiology Laboratory</i>	5
MTEC 260 <i>Instrumentation</i>	2
MTEC 265 <i>Laboratory Management</i>	2
MTEC 270 <i>Clinical Microscopy</i>	1
MTEC 271 <i>Clinical Microscopy Laboratory</i>	1
MTEC 275 <i>Medical Relevance of Laboratory Analysis</i>	1
MTEC 280 <i>Clinical Immunology</i>	3
	<hr/> 38

## Medical Technology (MTEC)

1. *Orientation to Medical Technology*. I, II. 2 hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Pass/Fail grading only.)

100. *Medical Technology*. 4 hr. PR: Acceptance into the Medical Technology Program as a first-year student or consent by Director. Clinical laboratory procedures employed in patient diagnosis in the areas of blood coagulation, blood banking, hematology, and clinical microscopy.

101. *Medical Technology*. II. 4 hr. Continuation of MTEC 100.

200. *Orientation*. I, II, S. No credit. (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics. (Pass-Fail grading only.)

202. *Laboratory Math, Quality Control, Computers*. I. 2 hr. Lectures and practice sessions in laboratory mathematics, techniques, and calculations in quality control and an introduction to computers to include terminology and basic operation.

210. *Clinical Laboratory Mycology*. II. 1 hr. How to isolate and identify the more commonly encountered pathogenic fungi as well as those fungi frequently seen as laboratory contaminants. The course will include basic taxonomy, isolation procedures, and identifying characteristics.

220. *Immunohematology and Blood Banking*. I, II. 2 hr. Lectures on immunohematology and blood banking theory and practice.

221. *Immunohematology and Blood Banking Laboratory*. Arranged. 5 hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.

229. *Basic Clinical Chemistry*. II. 1 hr. PR: Students in Medical Technology Program. Basic clinical chemistry procedures and theory. 1 hr. lec.

230. *Clinical Chemistry*. I, II. 2 hr. Lectures on principles of clinical chemistry procedures; their clinical significance and implication in diagnosis.

231. *Clinical Chemistry Laboratory*. Arranged. 5 hr. Practice in the clinical chemistry laboratory.

240. *Clinical Hematology*. I, II. 2 hr. Lectures in hematologic theory and practice.

241. *Clinical Hematology Laboratory*. Arranged. 5 hr. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation and problem solving.

250. *Clinical Microbiology*. I, II. 2 hr. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.

251. *Clinical Microbiology Laboratory*. Arranged. 5 hr. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology and parasitology.

260. *Instrumentation*. I, II, S. 2 hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.

265. *Laboratory Management*. I, II. 2 hr. Laboratory organization, economics, ethics, and records.

270. *Clinical Microscopy*. I, II, S. 1 hr. PR: Senior standing in Medical Technology or consent. Lecture to cover the screening of body fluids (urine, gastric juices, etc.) for abnormalities and pregnancy testing.

271. *Clinical Microscopy Laboratory*. I, II, S. 1 hr. PR: Senior standing in Medical Technology, or consent. Laboratory practicum in urinalysis, gastric analysis, pregnancy tests, and other procedures.

275. *Medical Relevance of Laboratory Analysis*. 1 hr. PR: Senior status in Medical Technology. Case presentations of pathologic entities encountered in the clinical laboratory. (Pass/Fail grading.)

280. *Clinical Immunology*. I, II, S. 3 hr. Lectures and laboratory practice in the principles of clinical immunology and their relationship to clinical laboratory technology.

291. *Research, Educational Methodology*. II. 2 hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.

## **Master of Science Program in Medical Technology Admission**

Applicants must have a baccalaureate degree in medical technology or an allied health field from an accredited college or university and must be a certified medical technologist with an acceptable certifying agency.

The area of concentration desired by the student is considered in the undergraduate record evaluation as follows:

Individuals who desire to do special study in clinical chemistry, hematology, or immunohematology must have completed a minimum of eight hours in physics, three hours in mathematics, and 12 hours in chemistry to include organic chemistry. Individuals who desire to do special study in microbiology must have completed a minimum of 12 hours of chemistry including organic chemistry and 16 hours in the biological sciences.

A minimum of one year's experience in a clinical laboratory is required. Applicants must have a minimum undergraduate grade-point average of 2.5 (based on a 4 point scale). Results of the aptitude portion of the Graduate Record Examination must be presented. Two professional letters of recommendation are required.

## **Application Procedure**

A preliminary application is filed in the medical technology program office,  
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along with two reference letters and the results of the aptitude portion of the Graduate Record Examination. These three items are reviewed, and if all prerequisites are met, the applicant must make formal application to West Virginia University. Once the formal application and grade transcripts are received, the file is reviewed by the Admissions Committee. A personal interview is required before final admission to the program.

## Graduation Requirements

- Satisfactory completion of all course work with a 3.0 GPA.
- A problem study in the major/minor area.
- Successful completion of a written comprehensive examination in major and minor interest fields.
- Successful completion of an oral defense of the problem study.

## Master of Science

It is expected that the students who enter the graduate program in medical technology at West Virginia University will have a goal in mind and will have a special field of interest in medical technology. The course of study the student follows is tailored to the needs of the student as far as it is possible to do so. A minimum of 36 semester hours of credit, including a problem study, is required for the degree.

The student selects:

- A major area of concentration from education, supervision, or administration.
- A minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunobiology.

A minimum of 15 semester hours of work from the following courses is selected, dependent upon the major area of concentration.

## Required Courses

## Hours

Educational Psychology 320 Introduction to Research .....3

### If the major area is education, the following courses are available:

Health Education 320 *Roles and Functions of Health Education* .....3

Education Administration 320 *Personnel Administration* ..... 3

Education Administration 351 *Administrative Procedures in Adult Education* 3

Education Administration 462 *Higher Education Law* .....3

Education Administration 463 *Higher Education Finance* .....3

Education Foundations 320 *Philosophic Systems and Education* .....3

### If the major area is supervision and/or administration, the following courses are available:

Education Administration 320 *Personnel Administration* .....3

Education Administration 462 *Higher Education Law* .....3

Education Administration 463 *Higher Education Finance* .....3

Public Administration 341 *Administrative Organization and Management* ....3

Public Administration 344 *Public Personnel Administration* .....3

Public Administration 345 *Public Administration and Policy Development* ....3

### The following courses are available for either major for additional credit:

Educational Psychology 231 *Sampling Methods* .....3

Educational Psychology 260 *Media and Microcomputers in Instruction* .....3

Educational Psychology 301 *Introductory Behavior Analysis* .....3

Educational Psychology 321 <i>Design of Experiments</i> .....	3
Educational Psychology 343 <i>Statistical Analysis in Education</i> .....	3
Educational Psychology 364 <i>Precision Teaching</i> .....	3
Educational Psychology 370 <i>Programmatic Research</i> .....	3
Health Education 308 <i>Community Health: Death Education</i> .....	3
Health Education 309 <i>Community Health: Drug Education</i> .....	3

Students may select courses in schools and colleges at West Virginia University other than the School of Medicine. Courses in management, economics, and education are available, as well as courses in the scientific disciplines of medical technology.

A course in statistical methods such as Educational Psychology 311, Statistics 311, or Community Medicine 311 is strongly recommended.

All students must complete a minimum of 18 semester hours in a science related to medical technology including MTEC 300 *Seminar* (three hours) and MTEC 497 *Problem Study* (six hours).

All full-time students register for one hour each semester in MTEC 300. Seminars include laboratory management, education in medical technology, and timely topics. A minimum of three hours of seminars to include all three of the above topics is required.

All students are required to pursue study on a problem in their areas of concentration. This study is reported in a thesis-style manuscript. For this study and report, students register in MTEC 497.

The total number of hours in MTEC 497 is determined by the student's program adviser. As many as nine semester hours in MTEC 497 may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only six semester hours in MTEC 497 will count toward the fulfillment of the 36 required semester hours for the degree, even though the student may have registered for as many as 15 hours in MTEC 497.

At the discretion of the student's program adviser, other requirements in teaching, supervision, and administration may be necessary. The adviser works out with the student a plan of study for the student's entire graduate program. This plan is made at the end of the first semester of the student's graduate study. A copy of this plan of study is filed in the Health Sciences Center Graduate Programs Office. The student's problem study committee is also formed at this time.

### **Courses in Medical Technology (MTEC)**

300. *Seminar*. I, II, S. 1 hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of three semester hours to include all three topics is required of all graduate students in the medical technology program.

491. *Advanced Study*. I, II, S. 1-6 hr. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration.

# Physical Therapy

S. L. Burkart, PT, Ph.D., Professor and Chairperson.

## Degree Offered:

***B.S. in Physical Therapy***

## Nature of Program

The WVU Physical Therapy Program was established in 1970 under the auspices of the School of Medicine to help meet the need for physical therapists in West Virginia. The program is accredited by the Commission on Accreditation in Physical Therapy Education, a specialized accrediting body recognized by the Council on Postsecondary Accreditation. One class of 20-28 full-time students is accepted each year for the final two years of a baccalaureate degree program.

Students admitted into the program complete six semesters (two are summer sessions) of combined classroom, laboratory and clinical education plus a minimum of 18 weeks of full-time supervised clinical practice in various clinics in West Virginia and other states. A bachelor of science degree is awarded to those completing the program, and entitles the graduate to apply for examination for state licensure. A license to practice physical therapy is required by all states.

## Admission Requirements

Recommended high school preparation for physical therapy includes courses in biology, chemistry, algebra, trigonometry, physics, and social sciences. Typing and familiarity with computers are advised.

Because individualized instruction in laboratories and clinics is an essential component of the program, enrollment must be limited. All students who wish to enter the program must apply for admission and must have completed or be enrolled in the courses listed below. These courses are available at most colleges and usually require two years to complete. Students with degrees in other fields are welcome to apply, but must also complete these courses.

<b>Courses Required for Application</b>	<b>Sem. Hr.</b>	<b>WVU Courses</b>
<b>Pre-Physical Therapy Courses</b>		
Biology (with lab)	8	BIOL 1, 2 & 3, 4
Chemistry (with lab)	8	CHEM 15 & 16
Physics (with lab)	8	PHYS 1 & 2
Introductory Psychology	3	PSYC 1
Developmental Psychology (life-span)	3	PSYC 141
Introductory Statistics	3	STAT 101
<b>WVU Liberal Studies Requirements</b>		
English Composition	6	ENGL 1 & 2
Cluster A courses*	12	
(Humanities and Fine Arts; courses in three disciplines, including two courses in one discipline)		
Cluster B courses*	6	
(Social and Behavioral Sciences; two courses in two different disciplines, neither of which is psychology)		

The courses listed are minimum requirements for application. Other recommended courses are human anatomy and human nutrition. Students are encouraged to pursue studies in additional courses of interest. Students who wish to substitute a course for one of those listed should contact the Division of

Physical Therapy for permission and provide a written description of the proposed substitute.

Applicants must have a minimum cumulative GPA of 3.0 and a minimum GPA of 3.0 in pre-physical therapy science courses. All applicants must have completed the Allied Health Professions Admission Test, and submit two letters of recommendation from physical therapists (not relatives) with whom they have worked in clinical settings. A minimum of 60, but preferably 80, hours of clinical volunteer or work experience is recommended. It is suggested that this experience be in at least two different settings.

Preference is given to West Virginia residents. A limited number of non-residents who have attended a West Virginia college or university, or who have other ties to the state, may also be considered.

Applicants who complete any of their pre-requisite courses at a college or university outside of West Virginia must submit a catalog or photocopy of the catalog description for all pre-requisite courses taken.

\* See Liberal Studies section of the catalog for specific courses acceptable in each Cluster. Three hours in either Cluster A or Cluster B courses must focus substantially on the study of a foreign or minority culture or on women and/or issues of gender.

Application forms are available beginning December 1 from the Office of Admission and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815. All application materials must be received from the applicant no later than March 1. Qualified applicants are interviewed by the Physical Therapy Admissions Committee. Those considered to demonstrate the greatest potential for success are recommended for admission into the program. A student who does not meet all application requirements, but who believes extenuating circumstances justify consideration, may petition the Committee for an interview.

## **Graduation Requirements**

Students admitted into the program must complete all required courses of each term with a grade of at least C or P in each, and must maintain a minimum GPA of 2.5 each term. Any student who does not meet these requirements may be placed on probation, suspended, or dismissed from the program. The Division of Physical Therapy reserves the right to suspend or dismiss any student who does not perform at an overall level considered satisfactory for patient care.

In the second semester of the junior year, the student will spend one day each week for ten weeks in a clinical setting under the supervision of a physical therapist. During the summer session after the junior year, the student will be in a clinical rotation eight hours a day for four weeks. In the Senior year, the student will be in clinical rotations eight hours a day for three weeks each semester.

After satisfactorily completing all the course work, the student will participate full time for a minimum of 18 weeks in three different clinical settings. Clinical affiliation sites are in West Virginia and other locations. Students must be prepared to pay for travel, meals, and lodging while participating in clinical rotations.

## Required Physical Therapy Curriculum

### JUNIOR YEAR

#### Summer II

ANAT 102	3
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#### First Semester

PATH 128	2
PHYS 241	4
PT 110	3
PT 111	1
PT 117	3
PT 120	3
	<u>17</u>

#### Second Semester

ANAT 308	2
PT 112	3
PT 114	3
PT 116	3
PT 118	3
PT 130	3
	<u>17</u>

#### Summer I or II

PT 116	0-3
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### SENIOR YEAR

#### First Semester

PT 271	4
PT 273	4
PT 275	3
PT 277	2
PT 279	4
PT 281	1
	<u>18</u>

#### Second Semester

PT 270	4
PT 272	2
PT 274	3
PT 276(Not required)	(3)
PT 278	5
PT 282	1
PT 285	3
	<u>18</u>

#### Summer I

PT 290	0-3
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#### Summer II

PT 290	0-3
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#### Fall

PT 290	0-3
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## Physical Therapy (PT)

Courses included in the physical therapy curriculum but not listed here may be found in the basic sciences section of this catalog. Enrollment in physical therapy courses is limited to students admitted to the program.

110. *Functional Anatomy*. I. 3 hr. The musculoskeletal system including biomechanics, principles of movement, and analysis of muscle and joint action. Normal and pathological gait.

111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. Lecture- laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy. Theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.

112. *Cardiopulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, and pathology for treatment of cardiopulmonary conditions. Laboratory in cardiopulmonary evaluation, cardiac and pulmonary rehabilitation procedures, and respiratory treatment techniques. Lectures and case presentations in appropriate medical and surgical conditions.

114. *Medicine and Neurology*. II. 3 hr. Lectures in medicine including dermatology, aging, neurology, pharmacology and vascular disorders.
116. *Clinical Education 1*. II. 1 hr. Students perform basic treatment procedures under the supervision of experienced therapists in various clinics. (Graded Pass-Fail only.)
117. *Seminar*. I. 1 hr. Investigation of selected problems and issues.
118. *Basic Therapeutic Exercise*. II. 3 hr. Theory and clinical application of evaluation techniques including goniometry and manual muscle testing. The physiological basis and therapeutic application of passive and active forms of exercise are also studied. Emphasis is on progressive resistive and flexibility exercises.
120. *Human Development*. I. 3 hr. Presents human development across the life span with a special emphasis on neuromotor development. Topics include genetics, embryology, infancy, childhood, adolescence, adulthood, aging, and death.
130. *Functional Anatomy 2*. II. 3 hr. Continuation of PT 110 with emphasis on normal movement to serve as a basis for critical evaluation of abnormal body movement. Includes biomechanical measurements, calculations, applied anatomy, body mechanics, and gait.
270. *Organization and Management*. II. 4 hr. Basic principles and philosophy of management and the organization with emphasis on interpersonal relationship within an organization, styles of tasks, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures (including high and low volt stimulation, nerve conduction studies, and the use of electrical stimulation for pain control) is provided.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare- Medicaid and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. Lectures, laboratory practice, and case study presentations are utilized to study the principles and techniques for examining the treatment disorders of the neuromusculoskeletal systems. An indepth study of extremity joint mobilization techniques is also provided.
274. *Orthopedic Physical Therapy*. II. 3 hr. Continuation of PT 273 format and is a continuation of that course. Evaluation and rehabilitation of mechanical disorders of the spine are emphasized together with physical therapy and orthopedic management of selected pediatric disorders.
275. *Professional Literature and Research*. I, I. 3 hr. Introduces research theory and application with special emphasis on physical therapy. Includes elements of research design, hypothesis testing, methodology, literature review, analysis, and statistical methods. Students are required to complete a research proposal.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student

chooses a particular area and develops it to the student's fullest capabilities in the allotted time.

**277. *Clinical Teaching*.** I. 2 hr. Emphasis on the physical therapist fulfilling numerous teaching roles. Students develop skill and techniques in the facilitation of learning, objective writing, presenting information, A-V utilization, and development of evaluation tools for both clinical and didactic settings.

**278. *Correlative Rehabilitation*.** II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.

**279. *Advanced Therapeutic Exercise*.** I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and fundamental anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.

**281. *Clinical Education 2*.** I. 1 hr. Continuation of PT 116. The student's participation in treatment programs is increased and enlarged to include basic testing and evaluation procedures. (Graded Pass-Fail only.)

**282. *Clinical Education 3*.** II. 1 hr. Supervised experience in more specialized procedures and testing techniques and patient program design. (Graded Pass-Fail only.)

**285. *Professional Literature and Research 2*.** II. 3 hr. Continuation of PT 275. Students carry out data collections, analysis, and interpretation of their own supervised independent research projects. Written and oral presentations of the completed projects are required.

**290. *Clinical Education 4*.** S. 1-12 hr. Three full-time summer affiliations of six to eight weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health. (Graded Pass-Fail only.)

# School of Nursing

E. Jane Martin, Ph.D., R.N., F.A.A.N., Dean.

Joan E. Watson, Ph.D., R.N., F.A.A.N., Associate Dean for Research and Graduate Education.

Jacqueline W. Riley, M.N., R.N., Assistant Dean.

Suzanne W. Gross, M.N.Ed., R.N., Chairperson, Senior Unit

Dorothy M. Johnson, Ed.D., R.N., Interim Chairperson, Junior Unit

Jacqueline G. Stemple, Ed.D., R.N., Chairperson, Sophomore Unit

Mary Jo Butler, Ed.D., R.N., Chairperson, Charleston Unit

## ***Degrees Offered:***

***Bachelor of Science in Nursing***

***Master of Science in Nursing***

The distinctive mission of West Virginia University School of Nursing is to serve as a center for nursing education, research, and practice. The goals of the School, which flow from the missions of the school, the Health Sciences Center, and the university, guide the development of the undergraduate and graduate programs in nursing.

The basic B.S.N. program can be completed in four (4) years in Morgantown or by attending two (2) years in Morgantown and two (2) years in Charleston. Consortium programs with Glenville State College and Potomac State College allow students to complete the first two (2) years at Glenville or Potomac State and the last two (2) years in Charleston or Morgantown.

Class and course requirements are flexible to accommodate the registered nurse who is a full-time worker and a part-time student. Both the baccalaureate completion program for registered nurses and graduate programs are offered in multiple off-campus sites through the West Virginia Satellite Network (SATNET).

Further information about the undergraduate programs may be obtained by writing Assistant Dean, WVU School of Nursing, 1146 Health Sciences North, PO Box 9600, Morgantown, WV 26506-9600 for Morgantown and Potomac State College programs; or Chairperson, Charleston Academic Unit, WVU School of Nursing, WVU Health Sciences Center Charleston Division, 3110 MacCorkle Avenue, SE, Charleston, WV 25304, for Glenville, Charleston, Beckley, and Parkersburg programs. Information about the graduate program is available from the Associate Dean for Research and Graduate Education, WVU School of Nursing, 3014 Health Sciences Center North, PO Box 9640, Morgantown, WV 26506-9640.

## **The Philosophy of the School of Nursing**

Nursing is an art and a science practiced by professionals in concert with individuals, families and communities for the purpose of promoting health. Nursing is a learned discipline whose perspective is the person-environment health process. The person is inseparable from the environment and interacts dynamically with the environment as a unified whole, thus maintaining integrity. This interaction enables the pursuit of choices and goals. Health is a process through which individuals, families, and communities maximize potential for living a self-determined life.

Health is promoted through the caring presence of the nurse in situations where capabilities are discovered, strengths are maximized, and development is nurtured. The caring presence is a relationship in which the nurse interacts with persons in the creative application of the discipline's art and science. Nurses collaborate with others to maximize resources for the benefit of the person.

The discipline of nursing is taught in an academic setting in which students must be educated to practice in a rapidly changing society. The knowledge base for nursing builds on content from the humanities and the sciences. Learning is a life long process which is enhanced in a climate of personal acceptance of the learner as an integrated being. Faculty and students share the responsibility for creating an atmosphere that fosters the development of intellectual curiosity, systematic inquiry, critical thinking, self direction, caring relationships, and a commitment to continued learning.

Nursing is accountable to society for ensuring that the public interest is protected and served. To promote the relevance of the discipline to societal needs, faculty contribute to the development and evaluation of the discipline by engaging in creative endeavors that reflect a synthesis of teaching, practice, and research.

Undergraduate education in nursing prepares individuals capable of beginning professional nursing practice and provides a foundation for graduate education in nursing. Graduate education in nursing at the masters level prepares persons to engage in advanced nursing practice and provides a foundation for doctoral study in nursing.

## **Accreditation**

The National League for Nursing is the recognized accrediting agency for nursing programs. The baccalaureate program received initial accreditation with graduation of the first class in 1964. The master's program was initially accredited in 1981. Both programs have continued to maintain accreditation.

## **Undergraduate Program**

The baccalaureate program (BSN) accommodates both high school or college students who aspire to a career in nursing and registered nurses (R.N.) who are licensed graduates of associate degree and diploma nursing programs and want to continue their career development.

Basic students may enroll on the Morgantown campus. They may also enroll for the freshmen and sophomore years at Glenville State College or Potomac State College. Students who begin their courses at Glenville or Potomac State College complete their junior and senior years on the Morgantown or Charleston campus. Nursing courses begin in the sophomore year and extend through the senior year.

Registered nurses can complete requirements for a baccalaureate degree in nursing on both the Morgantown and Charleston Health Sciences Center campuses and through extension at Beckley, Parkersburg, and selected other sites. At the extension sites all required non-nursing courses are earned in institutions of higher learning in the respective locations. Credit may be earned by enrollment, College Entrance Examination Board Advanced Placement Program, and advanced standing examination available in the particular institution. Nursing courses are offered at a rate of four to eleven credit hours a

semester and are scheduled to provide opportunity for completion of degree requirements in two to three years.

Undergraduate education in nursing prepares graduates to begin professional nursing practice and provides a foundation for graduate education in nursing. Upon completion of the baccalaureate curriculum, the nurse can practice in a variety of settings and with clients of various developmental levels. The graduate uses process skills to maintain, restore, or improve health states of clients, and applies leadership theory to effect change. The baccalaureate graduate uses a conceptual base to evaluate and modify the nursing role in relation to client needs and expectations and is prepared to support efforts in expanding nursing knowledge.

## **Fees, Expenses, Housing, Transportation**

Registering students pay the fees shown in the *WVU Health Sciences Center Catalog* charts, plus special fees and deposits as required. Fees are subject to change without notice. Students' expenses vary widely according to the course of study and individual tastes. Students are expected to provide their own transportation, equipment and instruments for the clinical courses. Specific immunizations, including hepatitis B, are required.

Information concerning financial assistance and application forms may be obtained by visiting or writing the HSC Financial Aid Office, Health Sciences North, PO Box 9810, Morgantown, WV 26506-9810, telephone 304/293-3706.

The University Housing and Residence Life Office, G-18 Towers (phone 304/ 293-3621), provides information concerning University-owned housing. The Student Life Office in Moore Hall (phone 304/293-5611 ) provides information concerning privately owned, off-campus housing.

**Some clinical experiences require the student to travel in a multi-county area. Students are responsible for providing their own transportation.**

## **Admission to Basic Program**

**Admission to the basic program is highly competitive. Meeting the minimum requirements to apply does NOT guarantee admission. Preference is given to West Virginia residents.** The opportunity for direct admission as freshmen may be available to selected students with a high school grade point average of 3.4 or higher and an ACT composite score of 22 or better.

Applicants are eligible for review by the Admissions Committee after completion of one full semester of college course work. The academic record is the major factor in the decision on admission. To qualify for **consideration**, a West Virginia resident must have a grade-point average of 2.5 or above, on a scale of 0.0 to 4.0 on all college work attempted. Residents of other states must have an average of 3.2 or above to be **considered**. West Virginia residents whose grade-point average falls between 2.3 and 2.5 and out of state residents with a grade-point average between 3.0 and 3.2 may petition in writing to the Admissions Committee for special consideration. Such a petition, clearly stating why the applicant should receive special consideration, must be submitted with the application.

Application to the basic program must be made by February 15 of the year the candidate wishes to be admitted. Application forms are distributed after

December 1 by the Health Sciences Center Office of Admissions and Records. Completed applications and the required application fee, payable to West Virginia University, may be presented in person or mailed directly to: ATTN: Nursing Secretary, WVU Office of Admissions and Records, 1170 Health Sciences Center North, PO BOX 9815, Morgantown, WV 26506-9815. February 15 is the deadline for receipt of all application materials, including transcripts.

Application to the Glenville State College-West Virginia University School of Nursing joint program follows the schedule described above. Application forms are available from the Office of Student Services, Charleston Division of WVU Health Sciences Center, 3110 MacCorkle Avenue S.E., PO BOX 1299, Charleston, WV 25304-1299. Completed applications for the consortium program and the required application fee, payable to West Virginia University, are mailed directly to the Student Affairs Coordinator, Charleston Division, WVU Health Sciences Center, 3110 MacCorkle Avenue, SE, PO BOX 1299, Charleston, WV 25304-1299.

### **Admission as a Transfer Student**

An applicant with nursing credit from an accredited college or university is eligible for consideration for admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. Acceptance and placement in the program is dependent on the individual's academic record and the number of spaces available in the program. Application should be initiated three months prior to the beginning of the semester in which the applicant wishes to begin nursing courses. Transcripts and other required materials must be received no later than two months before the start of the entering semester. Candidates apply to the Assistant Director of Admissions and Records, 1170 WVU Health Sciences Center North, PO BOX 9815, Morgantown, WV 26506-9815, requesting consideration for advanced placement as a transfer student.

### **Admission for Registered Nurses**

Registered nurses are admitted directly to the School of Nursing. Acceptance and placement in the program are dependent upon the individual's academic record and upon the number of spaces available in the program. An unrestricted license to practice nursing and a grade-point average of 2.5 or better on all college work attempted are required to be eligible for consideration. Candidates with a restricted license will be considered on an individual basis. Applicants whose grade-point average falls below 2.5 may petition to the Admissions Committee for special consideration. Registered Nurses who wish to take only selected satellite courses may apply for non-degree seeking status.

Application forms for the Morgantown Campus and extension sites may be obtained from the Assistant Director of Admissions and Records, 1170 WVU Health Sciences Center North, PO BOX 9815 Morgantown, WV 26506-9815. Application forms for the Charleston Division, Beckley and Parkersburg extension sites may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Health Sciences Center, 3110 MacCorkle Avenue, SE, PO BOX 1299, Charleston, WV 25304-1299.

## Academic Standards and Graduation Requirements

To be in good academic standing, students must: (1 ) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses. A student who is not in good academic standing must present to the advisor an acceptable plan for meeting these requirements. All such plans must be within the policies and standards set by the Academic Standards and Admissions Committee. The baccalaureate of science in nursing degree is conferred upon completion of 130-133 credit hours.

## Curriculum

The curriculum design for both undergraduate and graduate programs is derived from basic beliefs about the major concepts and from beliefs about learning and holism. In essence, a framework is provided to identify the core concepts and their relationships. This framework becomes the student's vehicle or mechanism through which added knowledge can be organized and synthesized, generating new ideas.

The usual curriculum progression for the **basic** student is presented in the suggested plan of progression.

For the registered nurse student, a minimum of 30 hours of general education courses that meet the University Liberal Studies Program and School of Nursing requirements should be completed before enrollment in the first nursing courses: Nursing 100, Basic Concepts in Professional Nursing; and Nursing 101, Transitional Practicum. It is recommended that the 30 hours be selected from the freshman and sophomore general education courses listed in the "Suggested Plan of Progression" under the section on curriculum. Special attention should be given to the physical, biological, and psycho-social sciences. Completion of additional general education courses beyond the 30 hours is recommended prior to beginning nursing courses if the R.N. student wishes to carry a part-time course load. The second semester of chemistry may be waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (Anatomy, Physiology, Microbiology, and Pharmacology).

All R.N. students are required to enroll in Nursing 100 and Nursing 101. The purpose of these courses is to facilitate transition into professional nursing. Special emphasis is placed on socialization into role and expectations of this role according to the School of Nursing's conceptual framework. **An unrestricted West Virginia R.N. license is required for enrollment in Nursing 101 and subsequent clinical nursing courses.**

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours. Graduates of diploma programs establish lower division credit in nursing by successful completion of a comprehensive lower-division challenge examination.

Upon successful completion of Nursing 100 and 101, establishment of lower division nursing credit, and completion of the general education course requirements listed in the suggested plan of progression for the first and second years of the program, the R.N. student is eligible for the Advanced Placement Experience (APE). APE is a conceptual approach to establishing credit for junior

nursing courses. Students enroll in specified sections of all Junior level courses and engage in experiences that result in an individualized diagnostic analysis of learning and completion of prescribed learning to meet identified needs. The prescriptive component, usually completed within the semester of enrollment in APE, forms the basis for continued learning in senior courses. Difficulty with APE may require special work or enrollment in additional sophomore or junior courses. Successful completion of APE and of the general education requirements is required to be eligible for matriculation in senior level courses. All senior nursing courses are taken by enrollment. Certification in school health nursing is available to students who meet additional course and experiential requirements.

## **B.S.N. Suggested Plan of Progression**

### **First Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
CHEM 11	4	CHEM 12	4
PSYC 1	3	ENGL 1	3
SOCA 1	3	BIOL 2	4
HN&F 71	3	PSYC 141	3
Cluster A or MATH 3	<u>3</u>	Cluster A or MATH 3	<u>3</u>
Total	16	Total	17

### **Second Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
NSG 80	4	NSG 75	2
NSG 81	3	NSG 82	4
ANAT 101	4	NSG 83	3
MBIO 26	4	PHYS 141	4
ENGL 2	<u>3</u>	PCOL 160	<u>3</u>
Total	18	Total	16

NSG 100 (R.N.'s only)	4
NSG 101 (R.N.'s only)	2

### **Summer between Second and Third Years (Basic students only)**

NSG 180	<u>3</u>
NSG 181	<u>3</u>
	6

### **Third Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
NSG 182	4	NSG 184	4
NSG 183	5	NSG 185	5
NSG 175 Or STAT 101	2-3	NSG 175 Or STAT 101	2-3
Cluster A/elective	<u>3-6</u>	Cluster A/elective	<u>3-6</u>
Total	14-18	Total	14-18

Advanced placement experience for junior level nursing courses available for the R.N.s 20 credit hours

#### **Fourth Year**

<i>First Semester</i>	<i>Hrs.</i>	<i>Second Semester</i>	<i>Hrs.</i>
NSG 270	2	NSG 275	2
NSG 284	3	NSG 282	2
NSG 280	3	NSG 283	3
NSG 281	2	NSG 285	4
NSG 286	4	Cluster A/electives	3-6
Total	17	Total	14-17

The sequence of courses may vary from campus to campus.

#### **Graduate Program**

The School of Nursing offers a program of study leading to the Master of Science in Nursing (MSN) degree to prepare the professional nurse for the role of nurse clinician in the advanced practice of nursing in primary health care. The program, which is administered by the Graduate Academic Unit, is offered at the University main campus in Morgantown and at selected extension sites.

The graduate program offers a curriculum which allows students to enroll on a part-time or full-time basis. Throughout the curriculum, students are guided in the processes of self-development aimed at pursuing excellence in scholarly and professional endeavors. The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, master's paper, thesis, and the opportunity to investigate an area of interest in advanced study.

The pattern and duration of the student's study plan is determined in consultation with a faculty advisor and is based upon the student's background and goals. The program can be completed in four semesters of full-time study at the Morgantown campus. The average full-time load is 9-12 credit hours per semester.

Graduate education in nursing prepares clinicians capable of leadership in developing and expanding nursing knowledge, skills, and practice competencies in light of societal needs. Preparation at the master's level provides the opportunity for the student to demonstrate self-direction and effective interactions with other health professionals in improving nursing practice and the health care delivery system. The master's graduate is able to provide quality health care in a variety of settings while clarifying and redefining nursing roles.

#### **Admission Requirements**

Applicants for the master's program in nursing must meet the admission requirements for graduate education at West Virginia University and be graduates of a National League for Nursing (NLN) accredited baccalaureate program in nursing. Applicants with a baccalaureate degree from nursing programs without NLN accreditation are required to take the NLN Comprehensive Achievement Test for Baccalaureate Nursing Students, Form 3113. These students are considered on an individual basis.

Applicants must have completed an introductory course in statistics (three credit hours) and present evidence of a current professional nursing license in at least one state. An interview with a Graduate Academic Unit faculty member and recommendations from the head of the undergraduate nursing program, current employer, and a colleague are also required. A statement of personal philosophy of nursing and professional goals must accompany the application.

The purpose of the interview is to verify application materials, review admission criteria, identify deficiencies and transferrable credits, and, where possible, project a tentative plan of study. It is expected that the applicant will take an active role in the interview process.

The application process must be completed by January 1 for summer enrollment, March 1 for fall enrollment, and August 1 for spring enrollment. Class sizes are limited based on available faculty resources and space.

Applicants need to complete the following steps in order to be considered for admission:

1. Complete two application forms as indicated and return to the appropriate offices to avoid unnecessary delay in the review process.

- a. Application for Admission to Graduate Studies (available from Admissions and Records). To be returned with a \$25.00 non-refundable service fee to: Office of Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.

- b. Application for Admission to the Master of Science in Nursing Program (available from Graduate Unit office). To be returned to: Associate Dean for Research and Graduate Education, WVU School of Nursing, PO BOX 9640, Morgantown, WV 26506-9640.

2. Request an official transcript of records from each college or university attended. Transcripts and records should be sent directly from the institution to the WVU Office of Admissions and Records, PO BOX 6009, Morgantown, WV 26506-6009.

3. Send the three recommendations directly to the Associate Dean for Research and Graduate Education, WVU School of Nursing, PO BOX 9640, Morgantown, WV 26506-9640.

4. Participate in an interview with a faculty member teaching in the graduate program.

The parameters used for review of applicants include: academic achievement, professional experience, career goals, and recommendations. Once admitted the student is assigned a faculty advisor who guides the student in curricular and academic matters. Enrollment in nursing courses is based on readiness and availability of space.

### **Degree Requirements.**

- Completion of 36 semester credit hours, including 27 hours in nursing, three hours in graduate-level statistics, and six hours of non-nursing electives.

- Completion of a master's paper (three hours).

- Achievement of an overall academic average of at least B in all work attempted in the master's program. The grade C in two nursing courses will require a faculty review of the student's program progression.

•Removal of all conditions, deficiencies, and incomplete grades. Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Required courses must be taken for letter grades (A, B, C). Electives may be opted for pass (P) or fail (F) grades, subject to the approval of the adviser.

### **M.S.N. Curriculum**

<b>M.S.N. Nursing Theory, Practice, and Research (27 hours)</b>	<b>Hr.</b>
NSG 370 <i>Theories in Nursing</i>	3
NSG 373 <i>Research Process and Methods in Nursing</i>	3
NSG 375 <i>Health Promotion</i>	3
NSG 376 <i>Health Policy</i>	3
NSG 378 <i>Health Promotion Practice I</i>	6
NSG 380 <i>Health Promotion Practice II</i>	6
NSG 397 <i>Research</i> (master's paper)	3
Subtotal	27
Cognates (one of which must be statistics)	9
Total	36

### **Full Time Plan of Study**

#### **FIRST YEAR**

##### **Fall Semester**

NSG 370 <i>Theories in Nsg</i>	3 cr
STAT 311	3 cr
Cognates	3 cr

##### **Spring Semester**

NSG 373 <i>Research</i>	3 cr
NSG 375 <i>Health Promotion **</i>	3 cr
Cognate	3 cr

#### **SECOND YEAR**

##### **Fall Semester**

NSG 376 <i>Health Policy</i>	3 cr
NSG 378 <i>Health Promotion Practice 1</i>	6 cr

##### **Spring Semester**

NSG 380 <i>Health Promotion Practice 2</i>	6 cr
NSG 397 <i>Research</i>	3 cr

**\*\* The introductory health assessment requirement, which is a prerequisite to admission to the MSN program, must be completed before enrolling in NSG 375.**

### **Nursing (NSG)**

#### **Undergraduate Courses (For Nursing Majors Only)**

75. *Issues of Nursing*. II. 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature .

80. *Concepts of Nursing 1*. I. 4 hr. PR: Sophomore standing or consent. Conc.: NSG 81 Introduces concepts, principles, and theories of nursing practice in relation to health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.

81. *Practicum 1. I.* 3 hr. PR: Sophomore standing or consent. Conc.: NSG 80. Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families. (*Graded as Pass-Fail*)

82. *Concepts of Nursing 2. II.* 4 hr. PR: NSG 80, 81 or consent. Conc.: NSG 83. Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.

83. *Practicum 2. II.* 3 hr. PR: NSG 80, 81 or consent. Conc.: NSG 82. Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families. (*Graded as Pass-Fail.*)

100. *Basic Concepts of Professional Nursing. I.* 4 hr. PR: West Virginia R.N. licensure or consent. Concepts and principles related to the professional nurse role. Focuses on the nurse role and role transition plus concepts in the School of Nursing curriculum.

101. *Transitional Practicum. I.* 2 hr. Conc.: NSG 100. Selected clinical experiences designed to help students identify strengths and remedy weaknesses in applying professional nursing concepts to client care. (*Graded as Pass- Fail.*)

175. *Issues of Nursing 2. I,II.* 2 hr. PR: NSG 75 or consent. Issues of nursing practice. Emphasizes related theories and research.

180. *Concepts of Nursing 3. S.* 3 hr. PR: Junior standing or consent. Conc.: NSG 181. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and moderate deviations from wellness. Builds on past intellectual and interpersonal arts and psychomotor skills.

181. *Practicum 3. S.* 3 hr. PR: Junior standing or consent. Conc.: NSG 180. Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and moderate deviations from wellness. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor skills. (*Graded as Pass-Fail.*)

182. *Concepts of Nursing 4. I.* 4 hr. PR: NSG 180, 181 Or consent. Conc.: NSG 183. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness.

183. *Practicum 4. I.* 5 hr. PR: NSG 180, 181 or consent. Conc.: NSG 182. Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. (*Graded as Pass-Fail.*)

184. *Concepts of Nursing 5. II.* 4 hr. PR: NSG 182, 183 or consent. Conc.: NSG 185. Continuation of concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages.

185. *Practicum 5. II.* 5 hr. PR: NSG 182, 183 or consent. Conc.: NSG 184. Selected experiences for application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. Emphasizes nursing care problems of increased complexity. (*Graded as Pass- Fail.*)

270. *Introduction to Research*. I,II. 2 hr. PR: Senior standing or consent, STAT 101 or equivalent. Theory, principles, and concepts of the research process with application to nursing practice.

275. *Issues of Nursing 3*. I,II. 2 hr. PR: Senior standing or consent. Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.

280. *Concepts of Nursing 6*. I,II. 3 hr. PR: Senior standing or consent. Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.

281. *Practicum 6*. I,II. 2 hr. PR: Senior standing or consent. PR or Conc.: NSG 280. Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills. (*Graded as Pass-Fail.*)

282. *Concepts of Nursing 7*. I,II. 2 hr. PR: Senior standing or consent. Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.

283. *Practicum 7*. I,II. 3 hr. PR: Senior standing or consent. PR or Conc.: NSG 282. Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population. (*Graded as Pass-Fail.*)

284. *Concepts of Nursing 8*. I,II. 3 hr. PR: Senior standing or consent. Analysis and synthesis of nursing role. Emphasizes theories of leadership and change, and environmental factors affecting health care delivery.

285. *Practicum 8*. I,II. 4 hr. PR: Senior standing or consent. PR or Conc.: NSG 284. Selected experiences in the practice of professional nursing in primary and secondary settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (*Graded as Pass- Fail.*)

286. *Practicum 9*. I,II. 4 hr. PR: Senior standing or consent. PR or Conc.: NSG 284. Selected experiences in the practice of professional nursing in acute or critical-care settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (*Graded as Pass- Fail.*)

### **Graduate Courses**

370. *Theories in Nursing*. I. 3 hr. PR: BSN, Consent. Introduction to the structure and function of extant theories in nursing as a basis for practice and research. Students evaluate theories, concepts, and research applicable to health promotion.

373. *Research Process and Methods in Nursing*. II. 3 hr. PR: NSG 370. PR or Conc: Graduate level statistics. Emphasizes understanding and critiques of research applicable to nursing. Theoretical rationale and appropriate methods to address research questions pertaining to health promotion with focal populations are targeted.

375. *Health Promotion*. II. 3 hr. PR: NSG 370\*\*. Focus is on understanding health promotion, maintenance, and restoration through analysis of applicable theories, models,

concepts and research. Students develop a conceptual model for nursing practice that includes assumptions, propositions, interventions and evaluation.

376. *Health Policy*. II. S. 3 hr. PR: NSG 370. Focus is on social, political, technological, ethical and economic dynamics which shape the formal and information systems of health care delivery. Impact of social policy on rural environments, nursing practice and health promotion is emphasized.

378. *Health Promotion Practice 1*. I. 6 hr. PR: NSG 373 and 375. Theoretical constructs of health, leadership, change and organization structure are included in addressing family and community. Practicum component supports the application and evaluation of a conceptually-based advanced nursing practice. Practicum and seminar.

380. *Health Promotion Practice 2*. II. 6 hr. PR: NSG 378. Supervised practicum and seminar are designed to facilitate the student's application of theoretical content related to the focal population of the elderly, children, parents and babies.

391. *Advanced Study*. I, II, S. 1-3 hr. PR: Graduate standing; consent. In depth study of topics related to current issues in primary health care. Study may be independent or through specially scheduled seminars.

397. *Research*. I, II, S. 1-15 hr. PR: NSG 373; PR or Conc: NSG 378. Refinement and implementation of research proposal to meet requirements for a master's paper.

**\*\* The Introductory health assessment requirement, which is a prerequisite to admission to the MSN program, must be completed before enrolling in NSG 375.**

# School of Pharmacy

Sidney A. Rosenbluth, Dean

Carl J. Malanga, Associate Dean for Academic Affairs and Administration

Calvin C. Brister, Assistant Dean for Student Affairs

David Lalka, Assistant Dean for Research and Graduate Programs

## **Degrees Offered:**

***B.S. in Pharmacy***

***Pharm. D. (post-baccalaureate)***

***M.S., Ph.D. in Pharmaceutical Sciences***

## **Introduction**

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It became the College of Pharmacy in 1936 and the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program. The current pharmacy curriculum comprises three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

A primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy. To meet this objective, the curriculum provides the student with the scientific and technical knowledge and communication skills required to practice the profession and inculcates in the student a concept of the pharmacist's professional responsibilities as a health sciences practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, positions are also available in various government agencies and professional organizations. In addition, the pharmaceutical industry provides various opportunities in promotion, distribution, production, and research. Pharmacists are eligible for commissions in the armed forces and for positions with the U.S. Public Health Service. Pharmacists also may prepare for careers in teaching and research through graduate study.

WVU School of Pharmacy offers M.S. and Ph.D. programs in the pharmaceutical sciences. Students may specialize in pharmacy, pharmaceutics, medicinal chemistry, pharmaceutical chemistry, biopharmaceutics/pharmacokinetics, pharmacology and behavioral and administrative pharmacy.

## **Accreditation**

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from the American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy, whose objective is to promote the interests of pharmaceutical education. All of the AACP member institutions must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be not less than 18 years of age and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate with forty-eight other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this catalog and the *WVU Undergraduate Catalog*. Students preparing for the study of pharmacy may satisfy the course work requirements for entrance into the School of Pharmacy by successfully completing the following course selections, or their equivalents:

Pre-Pharmacy Requirements*	Sem. Hr. Credit	WVU Courses Meeting Requirements
English Composition	6	ENGL 1 & 2
Introduction to Calculus	3	MATH 128
Principles of Microeconomics	3	ECON 54
General Biology	8	BIOL 1,3 & 2,4 or BIOL15 & 17
General Chemistry	8	CHEM 15 & 16
Organic Chemistry	8	CHEM 133/135 & 134/136
Physics	8	PHYS 1 & 2
Introduction to Statistics	3	STAT 101 or ECON 125
Electives**	21	
Total	68	

\*Represents modifications to be implemented fall, 1993.

\*\*Electives must be designed to satisfy the University Liberal Studies Program requirements. (See "Liberal Studies Program" for a listing of specific courses.) Cluster A—12 hr.; Cluster B—nine hr. in addition to Economics 54; and a three-hour course focussing on foreign or minority culture, women, or issues of gender.

*Because limited openings are available, preference in admissions is given to qualified West Virginians, although outstanding nonresident applicants are considered. Careful consideration is given to those personal qualifications which bear upon the fitness of applicants for the study and practice of the profession of pharmacy.*

Admissions are competitive and are based on cumulative and science academic grade-point averages achieved in all prior college courses, recommendations describing academic performance, results of the Pharmacy College Admissions Test (PCAT), and a personal interview, which may be required. A required course in which a grade of D was received must be repeated with a

grade of C or better before acceptance can be granted by the School of Pharmacy Committee on Admissions.

Applicants should write to the Office of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815 for official application forms, which will be made available after January 1 of each year and which should be returned to that office by April 1 preceding the fall term (first semester) in which the student seeks enrollment. Formal applications received after the April 1 deadline will be considered only when vacancies exist. A \$10.00 application fee is required and must accompany the application.

Each applicant who is recommended for acceptance is expected to deposit \$75.00 before his/her name is entered upon the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

Before enrollment in the School of Pharmacy, all students must complete the immunizations and diagnostic procedures required by the West Virginia Board of Trustees, West Virginia University, the University of West Virginia Health Sciences Center, and/or the School of Pharmacy.

Complete information may be obtained from the Dean of the School of Pharmacy, WVU Health Sciences Center, P.O. Box 9500, Morgantown, WV 26506-9500 or from the Office of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815.

### **Pharmacy College Admission Test**

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy adviser, the School of Pharmacy, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 555 Academic Court, San Antonio, TX 78204.

### **Personal Interview**

The Committee on Admissions may require a personal interview with an applicant, as it deems appropriate. Interviews are held during February, March, and April at the WVU Health Sciences Center and are arranged, insofar as possible, to suit the convenience of the applicant. The general policy is that only applicants with a cumulative and science grade-point average of 2.5 or above are called for an interview. Applicants with a cumulative or science grade-point average below 2.5 are generally not considered for admission.

### **Recommendations on Academic Performance**

Three faculty recommendations are required, although more may be submitted. At least two of these recommendations must be provided by course instructors in any two of the three pre-pharmacy science areas: biology, chemistry, and physics. The third recommendation may be provided by a course instructor of the student's choice.

### **Admission to Advanced Standing**

If space is available, students from other accredited schools of pharmacy may be admitted, provided they meet the course requirements of the WVU

School of Pharmacy, have at least a 2.5 grade-point average, and are eligible for continuation toward a degree in pharmacy in the school initially attended. D grades in professional courses can not be transferred.

## **Student Status and Advancement**

A student's status is determined by the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy, all grades except W, WU, P, and X are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average while in the professional program. An F grade or failure to attain a 2.0 average in any semester will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance, earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on Academic Standards for advancement to the third professional year. Any student on probation following the completion of the second semester of the second professional year shall not be eligible for summer clerkships. Any first-professional-year student deficient seven or more grade points at the end of the academic year shall fail promotion and shall repeat the year. Any second-professional-year student deficient four or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended or dismissed from the School of Pharmacy. An exceptionally poor performance during any semester may result in failure to be advanced or suspension.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students on probation are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 12 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

## **Special Requirements**

Fifteen hundred clock hours of internship experience are required by the Board of Pharmacy for licensure in West Virginia. Students are required to obtain an Intern Certificate from the West Virginia Board of Pharmacy. Any hours worked before becoming a registered intern will not apply toward meeting the Board requirements. The Intern Certificate must be maintained until completion of the internship.

During the first professional year, students will be informed of their assigned semester for the third professional year's required externship/clerkship program. Location and time of the rotations will be assigned during the first semester of the second year. Opportunity will be provided to state individual preference before

assignments are made; however, the School of Pharmacy reserves ultimate responsibility in making such assignments including assignments for the Kellogg and Rural Health Initiatives. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying externship/ clerkship assignments. The class will be divided into groups of approximately equal size for the summer, fall, and spring terms.

## Requirements for Degree

The degree of bachelor of science in pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

## Course Changes

A student who seeks credit for a course previously taken to replace a course prescribed in the student's curriculum must petition the Committee on Academic Standards.

## SCHOOL OF PHARMACY CURRICULUM PLAN\*

### First Professional Year

<b>First Semester</b>	<b>Hr.</b>	<b>Second Semester</b>	<b>Hr.</b>
BIOC 139 <i>Gen. Biochemistry</i>	4	MBIO 220 <i>Microbiology</i>	4
ANAT 101 <i>Hum. Anat.</i>	3	PHAR 202 <i>Concepts Pceut. 2</i>	4
PSIO 241 <i>Mech. Body Funct.</i>	4	PHAR 228 <i>Phar. Pract. Leg. Env.</i>	4
PHAR 200 <i>Intro . Pceut. Syst.</i>	3	PHAR 241 <i>Fund. Pthphysiology</i>	3
PHAR 201 <i>Concepts Pceut. 1</i>	3	PHAR 270 <i>Fund. Med. Chem. 1</i>	3
PHAR 227 <i>Phar. Soc. Env.</i>	2		18
	19		

### Second Professional Year

<b>First Semester</b>	<b>Hr.</b>	<b>Second Semester</b>	<b>Hr.</b>
PCOL 243 <i>Pharmacology</i>	4	PHAR 205 <i>Pceut. Asp. Phar. Prct.</i>	4
PHAR 203 <i>Concepts Pceut. 3</i>	4	PHAR 230 <i>Prof. Asp. Phar. Prct.</i>	3
PHAR 229 <i>Mgt. Asp. Phar. Pract.</i>	3	PHAR 243 <i>Chem. Immu. Agts.</i>	3
PHAR 245 <i>Pharmacotherapy 1</i>	3	PHAR 246 <i>Pharmacotherapy 2</i>	3
PHAR 271 <i>Fund. Med. Chem. 2</i>	2	PHAR 207 <i>Intro to Drug Lit.</i>	1
Electives	0-3	PHAR 260 <i>Princ. Med.</i>	2
	16-19	Electives	0-3
			16-19

### Third Professional Year

<b>First Session (Summer)</b>	<b>Hr.</b>	<b>Second Session (First Sem.)</b>	<b>Hr.</b>
PHAR 250 <i>Amb. Care Clerkship</i>	4	PHAR 250, 251, 252, and 253	
PHAR 251 <i>Med. Team Clerkship</i>	4	(See First Session)	
PHAR 252 <i>Inst. Care Clerkship</i>	4	or Electives	
PHAR 253 <i>Elect. Clerkship</i>	4	or Free Session	16
	16		16

### Third Session (Second Semester)

	<b>Hr.</b>
PHAR 250, 251, 252, and 253	
Electives or Free Session	16

\* Will be modified for fall, 1993.

Prior to graduation and usually following completion of the first professional year, each student enrolled in the School of Pharmacy must complete a minimum of 19 credit hours of electives as part of the pharmacy curriculum.

Of the 19 credit hours, a minimum of 10 credit hours must be electives offered in the School of Pharmacy. The remaining credit hours may be approved electives offered in other colleges and departments at WVU and include all Honors courses offered at WVU. Elective course lists are posted in the School of Pharmacy and are available from the student's adviser. Under special circumstances (e.g., new courses, preparation for special post-baccalaureate programs, etc.) and only with the adviser's permission, the student may take a course which does not appear on either list of approved electives. Beyond the required 19 credit hours, the student may take any other electives. No course taken prior to admission into the School of Pharmacy may be used nor repeated to meet the elective requirements of the professional curriculum.

A student admitted into the School of Pharmacy with a previously earned baccalaureate degree may petition the Committee on Academic Standards to be relieved of a maximum of nine credit hours of the approved non-pharmacy elective requirement. This petition is normally granted if the student is in good academic standing. The student petitions for this exemption during the preregistration period in the spring semester of the first year in pharmacy school with the exemption contingent upon the successful completion of both semesters of the first-year pharmacy curriculum. Once the exemption is granted, it shall not be revoked except for just cause as deemed necessary by the Dean and/or faculty.

The University pass/fail policy will be followed. Only Pharmacy 289 (first offering up to three hours), approved electives in other colleges and departments at WVU, or additional free electives may be taken on a pass/fail basis. A student with at least a 2.0 grade-point average may elect to take up to a maximum of four credit hours each semester on a pass/fail grading basis.

## **Post-Baccalaureate Doctor of Pharmacy**

The two-year Pharm. D. program includes a didactic component designed to improve the student's basic skills and knowledge base. It consists of courses in pathophysiology, therapeutics, drug literature review and evaluation, pharmacokinetics, and physical assessment. The second year of the program is experiential and emphasizes the application of the knowledge gained during the previous year. Students will train in a number of clinical clerkships, each being unique from the others. Each setting will enable students to enhance and refine their therapeutic skills, develop problem solving techniques, and learn to communicate and contribute as a member of a multidisciplinary health care team. Students are also required to undertake a research project. For more specific information, please write the Coordinator, Doctor of Pharmacy Program, School of Pharmacy, WVU Health Sciences Center, P.O. Box 9500, Morgantown, WV 26506-9500.

## **Graduate Programs**

### **Pharmaceutical Sciences**

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of master of science (M.S.) and doctor of philosophy (Ph.D.)

provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

## **Admission Requirements**

Applicants for admission into the graduate program must satisfy the general requirements for admission as graduate students. The applicant must possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences in order to be admitted with regular student status. Applicants not meeting criteria for admission with regular student status will be considered for admission under alternate admission classifications as explained in Part 2 of the *WVU Graduate Catalog*. In addition, Graduate Record Examination (GRE) scores in the verbal, quantitative, and analytical portions are required from all students except for applicants in the area of behavioral and administrative pharmacy, where test scores on the Graduate Management Admissions Test (GMAT) are acceptable. TOEFL, or similar scores, are required of international students.

## **Academic Standards**

No credits are acceptable toward a graduate degree with a grade lower than a C. A graduate student must have a cumulative grade-point average of at least 3.0 for all graduate courses to qualify for the degrees.

## **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the doctor of philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceutical chemistry, pharmaceuticals, biopharmaceuticals/pharmacokinetics, and behavioral and administrative pharmacy.

## **Requirements for Ph.D. Degree**

The student's first semester is usually occupied with course work while he or she is under the guidance of the assistant dean for research and graduate programs. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student, with committee advice, may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S., except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee, and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted to candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy, a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

### **Master of Science (M.S.)**

The same program requirements for the first year of graduate study are required of the M.S. degree student as those described for the Ph.D. student. The School of Pharmacy offers programs of graduate study leading to the degree of master of science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceutics, and pharmacokinetics.

### **Requirements for M.S. Degree**

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis. Upon completion of the course work and research requirements and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

### **Pharmacy (PHAR)**

200. *Introduction to Pharmaceutical Systems*. I. 3 hr. PR: First-year standing in pharmacy or consent. Pharmaceutical calculations, dosage forms, dispensing techniques, and an overview of pharmacy practice and career opportunities.

201. *Concepts in Pharmaceutics 1*. I. 3 hr. PR: First-year standing in pharmacy or consent. Concepts of a pharmaceutical systems with emphasis on the physicochemical principles in formulations and dosage forms, primarily solutions and their calculations.

202. *Concepts in Pharmaceutics 2*. II. 4 hr. PR: PHAR 201 or consent. Special dosage forms, quality control, drug analysis, design and manufacture of pharmaceutical formulations and their conformity with Food and Drug Administration (FDA) regulations, especially good manufacturing practices.

203. *Concepts in Pharmaceutics 3*. I. 4 hr. PR: PHAR 202 or consent. Fundamentals of biopharmaceutics/pharmacokinetics are presented. The kinetic, therapeutic, and dosage formulation-related aspects of drug absorption and disposition are discussed. Laboratories emphasize theoretical and practical problems in pharmacokinetics and bioavailability.

205. *Pharmaceutical Aspects of Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.

207. *Introduction to Drug Literature*. II. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.

211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile

dosage forms. (Includes lab component.).

212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.

213. *Industrial Pharmacy*. I. 3-4 hr. PR: PHAR 202. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experience in manufacturing and development techniques.

214. *Cosmetic Formulation*. II. 3 hr. PR: PHAR 202. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.

215. *Physical Pharmacy*. II. 3 hr. PR: Third-year standing in pharmacy or consent. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.

216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.

227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.

228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: PHAR 227 or consent. Continuation of PHAR 227 with emphasis on legal and health care delivery systems.

229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: PHAR 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.

230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. PR: PHAR 229 or consent. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.

231. *The Pharmacist Proprietor*. I. 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.

232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.

233. *Current Developments in Pharmacy Practice*. II. 3 hr. PR: Third-professional-year standing, or second-professional-year by consent. Examines issues of current importance to contemporary pharmacy practice such as prepaid health insurance, peer standards review and organizations, degree and title granting, competency based relicensure and continuing education, and technicians' roles.

241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.

243. *Chemotherapeutic and Immunobiologic Agents*. II. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.

245. *Pharmacotherapeutics 1*. I. 3 hr. PR: Second-year standing in pharmacy or consent. The application of pharmacodynamic, pharmacokinetic, and pharmaceutical principles in the treatment, diagnosis, and prevention of disease states.

246. *Pharmacotherapeutics 2*. II. 3 hr. PR: PHAR 245 or consent. A continuation of PHAR 245.

247. *Clinical Pharmacokinetics*. 3 hr. PR: PHAR 203 or consent. The application of pharmacokinetic principles to the therapeutic management of disease states. Includes effects of altered physiological conditions and diseases on drug kinetics and dose individualization techniques for specific drugs. (3 hr. lec.)

249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.

250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.

251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.

252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers (primarily hospitals) with emphasis on the pharmacist's relationship with institutional patients.

253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (PHAR 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.

256. *Advanced Pharmacotherapeutics*. I. 3 hr. PR: PHAR 246 or equiv., and consent. The integration of pharmacological-therapeutic concepts in the study of treatment modalities and problems which may be encountered by the pharmacist in drug management of selected disease states.

260. *Principles of Medicine*. II. 2 hr. A study of those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.

270. *Fundamentals of Medicinal Chemistry 1*. II. 3 hr. PR: First-year standing in pharmacy or consent. A relationship of the chemistry, structure, and physicochemical properties of drugs to their pharmacodynamic effects. Major portion devoted to basic principles followed by discussion in pharmacological classes.

271. *Fundamentals of Medicinal Chemistry 2*. I. 2 hr. PR: PHAR 270. Continuation of PHAR 270.

272. *Pharmacochemical Concepts of Drug Design*. II. 3 hr. PR: PHAR 271 or consent. Selected concepts of chemical approaches to the study of pharmacological and toxicological actions of drugs and their application to drug design.

276. *Pharmaceutical Quality Control*. II. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
280. *Drugs, Nutrients, and Health*. II. 3 hr. The course is intended to provide the student with fundamental concepts and principles of nutrition science.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present.
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies.
285. *Nuclear Pharmacy*. I. 3 hr. PR: Second-year standing in pharmacy or consent. Production and properties of radiation; detection of radiation; nuclear medicine instrumentation; the formulation, production, quality control, and use of radioactive materials and radiopharmaceuticals used in diagnosis and treatment.
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacology, or pharmacy administration.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: PHAR 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
300. *Industrial Pharmacy*. I. 4 hr. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
314. *Cosmetic Formulation*. II. 3 hr. PR: PHAR 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
315. *Physical Pharmacy*. I or II. 3 hr. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
370. *The Synthesis of Drugs*. I, II, S. 3 hr. PR: CHEM 332 and consent. A survey of the approaches employed in the synthesis of a variety of examples of pharmacologically useful agents. Emphasis is placed on retrosynthetic analysis of target molecules and the application of synthetic procedures to multi-step syntheses.
390. *Special Topics*. I, II, S. 1-4 hr.

391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. PR: Consent. A multidisciplinary weekly presentation and discussion of special topics and research in the pharmaceutical sciences. (Weekly attendance is required and grading is on an S/U basis only.)

396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.

484. *Special Seminar*. I, II, S. 1-6 hr. For use by disciplines in the pharmaceutical sciences wishing to have graduate students and faculty participate in seminars and group discussions on specialized or technical topics at the advanced level.

490. *Teaching Practicum*. I, II. 1-3 hr. PR: Graduate standing and consent. Supervised practices in college teaching of pharmacy.

491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Formal presentation by graduate students to assembled graduate faculty and students of research or special topics approved by adviser. Title to be presented at start of semester. Required at least once annually. (Grading is S/U.)

497. *Research*. I, II. 1-15 hr.

498. *Thesis*. I, II, S. 2-4 hr. PR: Consent.

### **Pharmaceutical Chemistry (PHCH)**

375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.

376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of PHCH 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.

377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.

### **Pharmaceutics (PCEU)**

302. *Advanced Pharmaceutics*. I or II. 3 hr. Physicochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.

### **Pharmacy Administration (PHAD)**

320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.

321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.

323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries. Oligopolistic practices, mergers, combines, costs of research, and production.

## **University Health Service**

When you enroll at the University, one of the charges that you pay is the health service fee. This fee allows you to use the primary medical care provided by the University Health Service. The service, located on the ground floor of Health Sciences South, includes medical consultation and treatment. To use the service, you must present your current student ID.

If you require more specialized care, the Health Service may refer you to an outpatient clinic at the Physicians Office Center. In this case, you are responsible for registration fees, doctor's fees, x-ray or lab fees, etc. The University Health Service publishes a brochure that details the services included in the health service fee and outlines services that are not provided.

The emergency department is available to you when the University Health Service is closed. However, all costs incurred at the emergency department are your responsibility. Since most insurance policies cover emergency department costs only when a true emergency exists, we advise you to use this service responsibly and maturely. A voluntary insurance plan is available to you to cover inpatient and outpatient services beyond the primary care covered by the health fee. We urge you to purchase this or a similar coverage.

## **Library**

The Health Sciences Library has a collection of more than 205,000 volumes and extensive holdings of audio-visual materials. It currently receives more than 2400 journals. The library primarily serves the schools of Dentistry, Medicine, Nursing, and Pharmacy, graduate students in the basic sciences, and the West Virginia University Hospital System. It also supports the biomedical information needs of the University and of health professionals across the state. As West Virginia's Resource Library in the National Library of Medicine's Regional Medical library network, the Health Sciences Library operates an efficient interlibrary loan service for University staff and students and for West Virginia's hospitals and clinicians. Other services include on-line searches of data bases available through the National Library of Medicine, Bibliographical Retrieval Services, Chemical Abstracts Services, OCLC, and Wilsonline. Also available are computer facilities permitting students, faculty, and staff to perform their own computer searches. A computerized West Virginia union list of periodicals is maintained, and installation of an integrated library system should soon be under way. The library is open 98 hours a weeks for most of the year; regular hours and variations are posted at the entrance.

West Virginia University Hospitals Inc. offer the following programs:

### **Radiologic Technology**

A two-year program for radiologic technologists is offered by the Department of Radiology at West Virginia University Hospitals. This course covers anatomy and physiology, radiologic physics and radiation biology, quality assurance, radiographic procedures, pathology, medical terminology, computer literacy, nursing procedures, and professional ethics. Subjects taken do not carry WVU credit, but provision to transfer course work under the Board of Regents Bachelor of Arts program may be pursued. Clinical education is acquired on assigned tours of duty under the tutelage of staff members and clinical instructors. The program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA).

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. All students are required to take the American College Testing Program (ACT) test and have the report of scores sent to WVU prior to the admission deadline. SAT scores are not accepted.

Students provide their own lodging and meals. Those completing the program are awarded a certificate and are eligible to take the American Registry of Radiologic Technologists Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Education Programs, Department of Radiology, West Virginia University Hospitals, P.O. Box 8062, Morgantown, WV 26506-8062. Application deadline is February 1.

### **Dietetic Internship Program**

The Dietetic Internship Program is offered by the Department of Nutrition and Dietetics of West Virginia University Hospitals. The internship is a 44-week generalist program providing learning experience in administrative and clinical dietetics, and is accredited by the American Dietetic Association. Upon successful completion of the program, the intern is recommended for membership in the American Dietetic Association and is eligible to complete the national registration examination.

Admission requirements are: completed bachelor's or advanced degree from an accredited college or university with courses meeting ADA-approved Didactic Program in Dietetics requirements, and at least a 2.8 overall grade-point average with a 2.2 in science courses and a 3.0 in food and nutrition courses. Applications should reach the Internship Director by February 13. Appointments will be made in April for entrance in September.

Appointments to the program will be based on personal goals and expectations as identified in the letter of application, evidence of scholastic performance, work experience, extracurricular activities, scholastic honors received, letters of reference, and telephone interview with the screening committee.

Communications should be addressed to:

Director of Dietetic Internship  
West Virginia University Hospitals  
Department of Nutrition and Dietetics  
P.O. Box 8016  
Morgantown, WV 26505-8016

### **Health Sciences Center Staff**

Evie Brantmayer, Assistant Director, WVU Admissions and Records.

Ann Chester, Ph.D., Assistant to the Vice President.

John T. Coughlin, Director of Communications.

Daniel Durbin, Director, Budget and Financial Operations—HSC.

Harold H. Harper, M.S., Special Assistant to the Vice President.

Gary B. Miller, Director, Maintenance Engineering.

Robert L. Murphy, Director, Health Sciences Library.

## School of Dentistry

Camillo A. Alberico, D.D.S. (Marquette U.). Professor Emeritus, Endodontics.  
 Timothy Atkinson, D.D.S. (U. Detroit). Clinical Assistant Professor, Oral and Maxillofacial Surgery.  
 Michael Bagby, D.D.S. (Loyola U.). Assistant Professor, Community Dentistry.  
 Lester H. Bakos, D.D.S. (WVU). Professor, Hospital Dentistry.  
 Arthur J. Beaumont, Jr., D.D.S. (WVU). Associate Professor, Prosthodontics.  
 Henry J. Bianco, Jr., D.D.S. (U. Md.). Interim Dean; Professor, Prosthodontics.  
 W. Robert Biddington, D.D.S. (U. Md.). Professor Emeritus, Endodontics.  
 Byron H. Black, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.  
 David Blanc, D.D.S. (WVU). Clinical Assistant Professor, Endodontics.  
 Jerry E. Bouquot, D.D.S. (U. Minn.). Professor and Chairperson, Oral Pathology.  
 Dale C. Bowers, D.D.S. (Ohio St. U.). Professor, Diagnostic Services.  
 Glenn Boyles, D.D.S. (WVU). Clinical Instructor (P-T). Operative Dentistry.  
 Kirkland Brace, D.D.S. (Georgetown U.). Clinical Instructor, Hospital Dentistry.  
 Eric Brannon, D.D.S. (WVU). Clinical Assistant Professor, Community Dentistry.  
 Regina R. Brannon, D.D.S. (WVU). Clinical Assistant Professor, Community Dentistry.  
 Robert Bridgeman, D.D.S., Clinical Associate Professor (P-T) Operative Dentistry.  
 William Buch, D.D.S. (Emory U.). Clinical Assistant Professor, Hospital Dentistry.  
 John L. Campbell, D.D.S. (Ind. U.). Professor Emeritus, Oral and Maxillofacial Surgery.  
 John Carson, D.D.S. (WVU). Clinical Assistant Professor, Oral and Maxillofacial Surgery.  
 Teresa Caruso, D.D.S. (WVU). Instructor, Prosthodontics.  
 Minter L. Chapman, D.D.S. (WVU). Clinical Professor (P-T). Operative Dentistry.  
 Wayne G. Christian, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.  
 Damon E. C. fman, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.  
 Myles I. Cogan, D.D.S. (U. Tex.). Clinical Professor, Hospital Dentistry.  
 Robert J. Conner, Jr., D.D.S. (WVU). Professor and Chairperson, Fixed Prosthodontics.  
 H. Lee Courtney, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.  
 Richard J. Crout, D.M.D. (U. Pitt.). Professor, Periodontics.  
 Christina DeBiase, Ed.D. (WVU). Professor, Dental Hygiene.  
 Ashok Dey, M.A. (NYU). Clinical Associate Professor, Pediatric Dentistry.  
 Wayne Dolan, D.M.D. (S. Ill. U.). Clinical Assistant Professor, Community Dentistry.  
 Amy Everett, D.D.S. (WVU). Clinical Instructor, Dental Practice Management.  
 Peter H. Fagan, D.D.S. (Loyola U., Chicago). Clinical Instructor, Hospital Dentistry.  
 Mohammad Farid, D.D.S. (WVU). Assistant Professor, Operative Dentistry.  
 Sanford J. Fenton, D.D.S. (NYU). Professor and Chairperson, Pediatric Dentistry.  
 David C. Fogarty, D.D.S. (WVU). Clinical Professor, Oral and Maxillofacial Surgery.  
 James R. Foor, D.D.S. (WVU). Associate Professor, Operative Dentistry.  
 John W. Frye, D.D.S. (WVU). Clinical Professor (P-T). Operative Dentistry.  
 Mohssen Ghalichebaf, D.D.S. (Indiana U.). Associate Professor, Prosthodontics.  
 Lewis Gilbert, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.  
 Marcia Gladwin, M.S. (U. Ky.). Professor, Dental Hygiene.  
 Stephen C. Gladwin III, D.D.S. (Ohio St. U.). Professor, Operative Dentistry.  
 Gene Glover, D.D.S. (U. Md.). Clinical Assistant Professor, Hospital Dentistry.  
 William L. Graham, D.D.S. (U. Md.). Professor Emeritus, Diagnostic Services.  
 Catherine E. Graves, M.A. (WVU). Professor, Dental Hygiene.  
 Robert W. Graves, D.D.S. (WVU). Professor and Chairperson, Oral and Maxillofacial Surgery.  
 Jean Gross, D.M.D. (U. Pitt.). Assistant Professor, Community Dentistry.  
 Ge, frey A. Gwynn, D.D.S. (WVU). Clinical Associate Professor, Pediatric Dentistry.  
 J. David Haddox, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.  
 John B. Haley, Jr., D.D.S. (WVU). Clinical Associate Professor, Oral and Maxillofacial Surgery.  
 Joseph D. Hancock, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.  
 George W. Harper, D.D.S. (WVU). Associate Professor, Prosthodontics.  
 William Harris, D.D.S. (WVU). Clinical Professor, Community Dentistry.  
 Richard I. Hart, D.D.S. (U. Mich.). Professor, Operative Dentistry.  
 David M. Hickman, D.D.S. (WVU). Professor, Dental Practice Management.  
 Robert H. Hornbrook, D.D.S. (WVU). Associate Professor, Periodontics.  
 Barbara Ingersoll, Ph.D. (Penn. St. U.). Clinical Associate Professor, Community Dentistry.  
 Kent E. Jackfert, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.  
 C. Russell Jackson, D.D.S. (WVU). Associate Professor, Endodontics.  
 S. N. Jagannathan, Ph.D. (U. Bombay). Professor, Periodontics.  
 Charles Kennedy, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.  
 Gordon G. Keyes, D.D.S. (U. Md.). Professor, Oral Pathology.  
 Darryl R. King, D.D.S. (WVU). Clinical Assistant Professor, Oral and Maxillofacial Surgery.  
 Wendell C. Kitchen, D.D.S. (Ohio St. U.). Associate Professor, Orthodontics.

Barbara K. Komives, M.S. (Ohio St. U.). Professor and Chairperson, Dental Hygiene.

Markus K. Koster, D.D.S. (WVU). Clinical Assistant Professor, Pediatric Dentistry.

John Kuyk, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.

Stephen J. Kwiatkowski, D.D.S. (WVU). Professor, Prosthodontics.

David A. Lattanzi, D.D.S. (Case West. Res. U.). Clinical Associate Professor, Oral and Maxillofacial Surgery.

Michael Lessin, D.D.S. (U. Ill.). Clinical Associate Professor, Oral and Maxillofacial Surgery.

John Lindsay, D.D.S. (WVU). Clinical Assistant Professor, Oral and Maxillofacial Surgery.

Clifford Linkous, D.D.S. (WVU). Clinical Assistant Professor, Oral and Maxillofacial Surgery.

Paul L. Lin, D.D.S. (U. Md.). Clinical Professor, Community Dentistry.

Raymond L. McCutcheon, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.

William R. McCutcheon, D.D.S. (WVU). Associate Dean; Professor and Chairperson, Community Dentistry.

Denise Malcolmson, D.D.S. (WVU). Assistant Professor, Diagnostic Services.

William Marshall, D.D.S. (WVU). Associate Professor, Hospital Dentistry.

Rick Massullo, D.D.S. (WVU). Clinical Instructor (P-T). Prosthodontics.

Mark Mathias, D.D.S. (Baltimore Col./Dent. Surg.). Clinical Instructor, Pediatric Dentistry.

Richard L. Meckstroth, D.D.S. (Loma Linda U., Calif.). Professor, Community Dentistry.

H. Darrell Milem, D.D.S. (WVU). Clinical Assistant Professor (P-T). Periodontics.

David Miranda, D.D.S. (WVU). Clinical Instructor, Community Dentistry.

Paul Mitchell, D.D.S. (NJ Col. Med. & Dent. Surg.). Clinical Associate Professor, Community Dentistry.

Susan Morgan, D.D.S. (WVU). Clinical Assistant Professor, Community Dentistry.

Donald J. Morrison, D.D.S. (U. Iowa). Professor and Chairperson, Periodontics.

Robert L. Murphy, M.S. (Cath. U. Am.). Adjunct Associate Professor, Periodontics.

Gary G. Naylor, D.D.S. (WVU). Clinical Associate Professor (P-T). Operative Dentistry.

Donald Neil, D.D.S. (U. Detroit). Clinical Professor, Community Dentistry.

Franklin Oliverio, D.D.S. (U. Md.). Clinical Associate Professor (P-T). Oral and Maxillofacial Surgery.

William M. Oscanyan, D.D.S. (WVU). Associate Professor, Hospital Dentistry, Charleston Division.

James E. Overberger, D.D.S. (U. Pitt.). Associate Dean; Professor, Dental Materials.

Rajiv Paonaskar, D.D.S. (WVU). Assistant Professor and Acting Chairperson, Orthodontics.

James L. Payne, D.D.S. (U. Mo.). Clinical Assistant Professor, Hospital Dentistry.

Joseph Pelle, D.M.D. (U. Pitt.). Assistant Professor, Orthodontics.

John Perrine, D.D.S. (WVU). Clinical Assistant Professor, Community Dentistry.

Robert G. Pifer, D.D.S. (WVU). Professor and Chairperson, Diagnostic Services.

Rodney Powers, D.D.S. (WVU). Assistant Professor, Operative Dentistry.

Shelia S. Price, D.D.S. (WVU). Associate Professor, Diagnostic Services.

David T. Puderbaugh, D.D.S. (WVU). Professor and Chairperson, Dental Practice Management.

William F. Queen, D.D.S. (WVU). Clinical Associate Professor, Prosthodontics.

Kathy Raymond, M.S. (WVU). Assistant Professor, Dental Hygiene.

Robert Raynes, D.D.S. (WVU). Clinical Assistant Professor, Endodontics.

Vernon Rodeffer, D.D.S. (U. Md.). Associate Professor, Operative Dentistry.

William J. Rosenfeld, D.D.S. (SUNY). Clinical Associate Professor, Periodontics.

Jack A. Roth, D.D.S. (U. Md.). Professor, Prosthodontics.

John Ruby, D.M.D. (U. Penn.). Clinical Assistant Professor, Pediatric Dentistry.

W. Dean Russell, D.D.S. (Emory U.). Clinical Assistant Professor, Hospital Dentistry.

Kathleen Schroeder, D.D.S. (Ohio St. U.). Associate Professor, Oral Pathology.

Alex W. Skaff, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.

Donald Skaff, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.

A. E. Skidmore, D.D.S. (WVU). Professor and Chairperson, Endodontics.

Homer W. Smith, D.D.S. (WVU). Professor, Diagnostic Services.

Norton P. Smith, D.D.S. (WVU). Professor, Prosthodontics.

Michael J. Sokolosky, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.

Carol Spear, M.S. (U. Mich.). Professor, Dental Hygiene.

Frank Stevens, D.D.S. (WVU). Assistant Dean and Professor, Operative Dentistry.

John T. Stevens, D.D.S., Professor and Chairperson, Operative Dentistry.

Charles J. Stewart, D.D.S. (WVU). Associate Professor, Prosthodontics.

Robert Stuchell, D.M.D., (U. Pitt.). Professor, Periodontics.

Lawrence E. Syner, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.

Christopher Taylor, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.

Daniel R. Taylor, D.D.S. (WVU). Clinical Associate Professor, Endodontics.

Kay F. Thompson, D.D.S. (U. Pitt.). Clinical Professor, Community Dentistry.

Louise Tupta-Veselicky, D.D.S. (WVU). Assistant Professor, Periodontics.

John Unkel, D.D.S. (Northwestern U.). Assistant Professor, Pediatric Dentistry.

James E. Valentine, D.D.S. (WVU). Clinical Associate Professor, Orthodontics.

Alan K. Vance, D.D.S. (WVU). Clinical Assistant Professor, Community Dentistry.  
 John Vargo, D.D.S. (WVU). Clinical Assistant Professor, Hospital Dentistry.  
 Patricia Volker, RH (W. Lib. St. Col.). Adjunct Clinical Instructor, Dental Hygiene.  
 David H. Walker, D.D.S. (WVU). Professor, Dental Practice Management, Charleston Division.  
 Robert L. Wanker, D.D.S. (WVU). Clinical Associate Professor (P-T). Periodontics.  
 John T. Welch, D.D.S. (U. Md.). Professor and Chairperson, Hospital Dentistry.  
 Steven Whitaker, D.D.S. (Emory U.). Associate Professor, Oral Pathology.  
 John B. Wilfong, D.D.S. (Ohio St. U.). Clinical Associate Professor (P-T). Orthodontics.  
 Thomas S. Wilkerson, D.D.S. (WVU). Clinical Associate Professor, Hospital Dentistry.  
 John A. Wilson, D.D.S. (Ohio St. U.). Clinical Associate Professor, Community Dentistry.  
 William M. Wine, D.D.S. (WVU). Clinical Associate Professor, Oral and Maxillofacial Surgery.  
 Stephen Young, Ph.D. (U. N. Mex.). Clinical Associate Professor, Oral Pathology.

## School of Medicine

Henry L. Abrons, M.D. (Case West. Res. U.). Professor, Medicine (Pulmonary Medicine).  
 Ali Fawzi AbuRahma, MBCh. (Alexandria U.). Associate Professor, Surgery—Charleston Division.  
 Thomas R. Adamski, M.D. (WVU). Assistant Professor,, Behavioral Medicine and Psychiatry.  
 Margaret J. Albrink, M.D. (Yale U.). Professor Emerita, Medicine (Metabolism, Endocrinology).  
 Jo Ann Allen, M.D. (USC). Assistant Professor, Medicine (Rheumatology).  
 Linda Gail Allison, M.D. ( S. Ill.U.). Assistant Professor, Emergency Medicine.  
 Dona M. Alvarez, M.D. (WVU). Clinical Instructor, Orthopedics.  
 Mary Ann Antonelli, M.D. (SUNY). Assistant Professor, Medicine (Rheumatology).  
 James G. Arbogast, M.D. (WVU). Interim Chairperson and Professor, Family Medicine.  
 Stephen C. Aronoff, M.D. (U. of Pitt.). Associate Professor, Pediatrics.  
 Jeffrey V. Ashley, M.D. (WVU). Assistant Professor, Family Medicine, Charleston Division.  
 Beverly G. Atkinson, B.S. (U. Witwatersrand). Adjunct Assistant Professor, Physical Therapy.  
 Miklos Auber, M.D. (Simmelweis Med. U.). Assistant Professor, Medicine (Hematology/Oncology).  
 Albert J. Azzaro, Ph.D. (WVU). Professor, Neurology, Pharmacology and Toxicology, and Behavioral Medicine and Psychiatry.  
 John Chris Baker, M.D. (WVU). Assistant Professor, Pediatrics (Genetics).  
 Marvin R. Balaan, M.D. (U Philippines). Assistant Professor, Medicine (Pulmonary Medicine).  
 Daniel E. Banks, M.D. (Wayne State U.). Section Chief and Professor, Medicine (Pulmonary Medicine).  
 Christine A. Banvard-Fox, M.D. (WVU). Adjunct Assistant Professor, Pediatrics and Physician, University Health Service.  
 John J. Barbaccia, M.D. (SUNY-Buffalo). Assistant Professor, Anesthesiology.  
 John B. Barnett, Ph.D. (U. Louisville). Chairperson and Professor, Microbiology and Immunology.  
 Michele Krieg Bauer, ACSW (Rutgers U.). Adjunct Assistant Professor, Behavioral Medicine and Psychology.  
 R. David Bauer, M.D. (Col. U.). Assistant Professor, Orthopedics.  
 Christine Baylis, Ph.D. (Leeds U.). Professor, Physiology.  
 Diana Scott Beattie, Ph.D. (U. Pitt.). Chairperson and Professor, Biochemistry.  
 Jacqueline P. Benziger, M.D. (U. N. Mex.). Assistant Professor, Pathology (Clinical).  
 William A. Beresford, Ph.D. (Oxford U.). Professor, Anatomy.  
 Albert S. Berrebi, Ph.D. (U. Conn.). Assistant Professor, Otolaryngology and Anatomy.  
 Mary J. Berry, M.S.W. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.  
 Christine A. Bezouska, M.D. (SUNY-Buffalo). Assistant Professor, Anesthesiology and Behavioral Medicine.  
 Veena K. Bhanot, M.D. (Gov. Med. C., India). Assistant Professor, Behavioral Medicine and Psychiatry—Charleston Division.  
 Parth S. Bharill, M.B.B.S. (Rajasthan Jaltur, India). Assistant Professor, Medicine (Gastroenterology).  
 Dale L. Birkle, Ph.D. (U. Mich.). Assistant Professor, Pharmacology and Toxicology.  
 Russell Biundo, M.D. (Northeast U.-Mexico). Clinical Assistant Professor, Orthopedics.  
 J. David Blaha, M.D. (U. Mich.). Chairperson and Professor, Orthopedics.  
 Paul D. Blanton, Ph.D. (U. of Ala-Birm.). Assistant Professor, Behavioral Medicine and Psychiatry—Charleston Division.  
 Donald M. Blatchley, M.D. (Jeff. Med. C.). Clinical Professor Emeritus, Medicine (Dermatology).  
 Nancie A. Blechschmidt, B.S. (WVU). Instructor, Medicine (Metabolism-Endocrinology).and Medical Technology.  
 Stephen M. Bloomfield, M.D. (R.W. Johnson Med. Sch.). Assistant Professor, Neurosurgery.

Frederick C. Blum, M.D. (WVU). Assistant Professor, Emergency Medicine, Pediatrics, and Medicine (Comprehensive).

John B. Bodensteiner, M.D. (U. Iowa). Professor, Neurology and Pediatrics.

Matthew Boegehold, Ph.D. (U. of Ariz.). Assistant Professor, Physiology.

James P. Boland, M.D. (Jeff. Med. C.). Chief and Professor, Surgery—Charleston Division.

Kathleen P. Bors, M.D. (WVU). Adjunct Assistant Professor, Family Medicine—Charleston Division.

Mark A. Borsch, M.D. (Ohio St. U.). Assistant Professor, Medicine (Cardiology).

Jerry E. Bouquot, D.D.S. (U. Minn.). Professor, Pathology.

Karl Douglas Bowers, Jr., M.D. (Jeff. Med. C.). Clinical Professor, Orthopedics.

Carole Brooks Boyd, M.D. (Wayne St. U.). Associate Professor, Pathology.

Andrew S. Bradlyn, Ph.D. (U. Miss.). Associate Professor, Behavioral Medicine and Psychiatry.

Lenore A. Breen, M.D. (U. Tex., Med. Brch.). Associate Professor, Neurology and Ophthalmology.

James E. Brick, M.D. (WVU). Associate Professor, Medicine (Rheumatology).

John F. Brick, M.D. (WVU). Associate Dean for Hospital Affairs and Associate Professor, Neurology.

Lynn M. Broadman, M.D. (Med. Col. Ohio). Professor, Anesthesiology and Pediatrics.

Kathleen P. Brooks, Ph.D. (U. Cal.-Davis). Adjunct Assistant Professor, Pathology.

Paul B. Brown, Ph.D. (U. Chicago). Professor, Physiology.

Sandy L. Burkart, Ph.D. (WVU). Chairperson and Professor, Physical Therapy.

Robert G. Burrell, Ph.D. (Ohio St. U.). Professor, Microbiology and Immunology.

Fred R. Butcher, Ph.D. (Ohio St. U.). Director, Mary Babb Randolph Cancer Center and Professor, Biochemistry.

Roy L. Butcher, Ph.D. (Iowa St. U.). Professor, Obstetrics and Gynecology.

Marilyn H. Byrne, A.C.S.W. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.

Patricia A. Caballero, M.D. (U. Tex.-San Antonio). Instructor, Anesthesiology.

James Cahill, M.D. (WVU). Instructor, Behavioral Medicine and Psychiatry.

William J. Canady, Ph.D. (Geo. Wash. U.). Professor Emeritus, Biochemistry.

Billy Ray Carlton, Ed.D. (U. Tenn.). Professor, Community Medicine.

Marshall J. Carper, M.D. (Med. C. Va.). Professor Emeritus, Family Medicine—Charleston Division.

John M. Cavendish, Ed.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.

Peter B. Challoner, Ph.D. (UC—Berkeley). Assistant Professor, Biochemistry.

William W. L. Chang, M.D. (Nat'l. Taiwan U.). Professor, Pathology.

Judie F. Charlton, M.D. (WVU). Assistant Professor, Ophthalmology.

Nyles Charon, Ph.D. (U. Minn.). Professor, Microbiology and Immunology.

Myra Lee Chiang, M.D. (U. East Philippines). Assistant Professor, Pediatrics—Charleston Division.

Elliott W. Chideckel, M.D. (U. Md.). Professor, Medicine (Metabolism-Endocrinology).

Shawn A. Chillag, M.D. (WVU). Chief and Associate Professor, Medicine—Charleston Division.

Vincent Chiodo, M.D. (WVU). Instructor, Pediatrics.

Juanito Chua, M.D. (U. St. Tomas). Clinical Associate Professor, Surgery (General).

Elizabeth O. Chung, M.D. (U. Philippines). Assistant Professor, Pediatrics and Neurology.

John P. Claude, M.S.W. (WVU). Associate Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Paul L. Clausell, M.D. (WVU). Associate Professor, Behavioral Medicine and Psychiatry.

Ronald L. Cleaver, M.D. (WVU). Associate Professor, Family Medicine and Physician, University Health Service.

Holly A. Cloonan, Ph.D. (Purdue U.). Assistant Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Robert C. Cochran, M.D. (Boston U.). Professor, Surgery—Charleston Division.

Brenda K. Colasanti, Ph.D. (WVU). Adjunct Professor, Pharmacology and Toxicology.

Celia Anne Collins, M.S. (U. Pitt.). Research Instructor, Medicine (Clinical Nutrition).

John M. Connors, Ph.D. (U. Ill.). Associate Professor, Physiology.

William T. Corder, M.D. (WVU). Assistant Professor, Pediatrics (General).

Vicente Cortes, M.D. (Nat'l U. Col.). Assistant Professor, Surgery (Trauma).

Thomas H. Covey, Jr., M.D. (Harvard U.). Associate Professor, Surgery (Oncology).

Donald W. Cox, M.D. (Geo. Wash. U.). Professor, Obstetrics and Gynecology.

Charles R. Craig, Ph.D. (U. Wisc.). Professor, Pharmacology and Toxicology.

Gail K. Crosby, (Med. Col. of Va.). Associate Professor, Family Medicine.

Edward B. Crowell, Jr., M.D. (U. Chicago). Associate Professor, Medicine (Hematology/ Oncology).

Jose Luis Cruzavala, M.D. (U. Autonoma de Tamaulipas Tampico, Tamaulipas). Assistant Professor, Surgery (Thoracic).

Christopher F. Cuff, Ph.D. (Temple U.). Assistant Professor, Microbiology and Immunology.

James L. Culberson, Ph.D. (Tulane U.). Professor, Anatomy.

Michael E. Cunningham, M.D. (WVU). Associate Professor, Radiology.

Karen A. Curta, Ph.D. (WVU). Research Assistant Professor, Pharmacology and Toxicology.

Anne C. Cutlip, M.D. (WVU). Assistant Professor, Family Medicine.

William D. Cutlip, M.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry and Neurology.

John C. Cwik, M.D. (Jeff. Med. C.). Clinical Professor, Anesthesiology.

Robert D'Alessandri, M.D. (N.Y. Med. C.). Vice President for Health Sciences, Dean, School of Medicine, and Professor, Medicine (Comprehensive Medicine).

Rachel A. Dash, M.S.W. (U. Md.). Assistant Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Richard Dattola, M.D. (Temple U.). Assistant Professor, Family Medicine.

Mary Elizabeth Davis, Ph.D. (Mich. St. U.). Associate Professor, Pharmacology and Toxicology.

Harakh V. Dedhia, M.B.B.S. (Grant Med. C.). Associate Professor, Anesthesiology and Medicine (Critical Care).

Bharati S. Desai, M.B.B.S. (Baroda Med. C.). Adjunct Associate Professor, Behavioral Medicine and Psychiatry and Pediatrics.

Russell F. DeVore, M.D. (WVU). Assistant Professor, Medicine (Hematology/Oncology).

Michael DeWitt, D.O. (WVSOM). Assistant Professor, Family Medicine—Charleston Division.

Richard D. Dey, Ph.D. (Mich. St. U.). Professor, Anatomy.

Anthony DiBartolomeo, M.D. (WVU). Section Chief and Professor of Medicine (Rheumatology) and Associate Dean for Clinical Affairs.

Thomas O. Dickey III, M.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Daniel J. Dickman, M.D. (WVU). Assistant Professor, Family Medicine—Charleston Division.

Rocco J. DiGiacchino, M.D. (U. Bologna). Assistant Professor, Radiology (Diagnostic).

Charlotte L. Dillis, M.D. (Georgetown U.). Adjunct Assistant Professor, Radiology (Diagnostic).

Anthony J. Dominic, Jr., M.D. (Georgetown U.). Instructor, Radiology (Diagnostic).

Himanshu M. Doshi, M.B.B.S. (Bombay U.). Assistant Professor, Pathology.

Kenneth H. Douglass, Ph.D. (Carnegie-Mellon U.). Associate Professor, Radiology (Radiation Safety).

Gregory A. Doyle, M.D. (Med. Col. Va.). Assistant Professor, Family Medicine.

Alan M. Ducatman, M.D. (Wayne St. U.). Director and Professor, Occupational Medicine and Professor, Medicine (Comprehensive Medicine) and Community Medicine.

John P. Durham, Ph.D. (Ohio St. U.). Professor, Biochemistry.

John M. Eckerd, M.D. (Bowman-Gray SOM). Associate Professor, Pediatrics—Charleston Division.

Peter R. Edelman, M.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Robert K. Edmondson, A.C.S.W. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.

Stanley Einzig, M.D. (U.C.L.A.). Professor, Pediatrics (Cardiology) and Physiology.

Stephen Elksnis, M.D. (U. Md.). Assistant Professor, Radiology (Diagnostic).

Richard W. Eller, M.D. (Temple U.). Professor, Anesthesiology.

Thomas E. Ellis, Psy.D. (Baylor U.). Associate Professor, Behavioral Medicine and Psychiatry—Charleston Division.

David M. Elnicki, M.D. (U Pitt). Assistant Professor, Medicine (Comprehensive Medicine).

Marilyn I. Evans, Ph.D. (U. Wash.). Assistant Professor, Biochemistry.

Robert W. Farr, M.D. (WVU). Assistant Professor, Medicine (Infectious Disease) and Otolaryngology.

Steven M. Faynor, Ph.D. (U. Wisc.). Assistant Professor, Pathology (Clinical).

Joseph G. Feghali, M.D. (Am. U. Beirut). Assistant Professor, Ophthalmology.

Norman D. Ferrari III, M.D. (WVU). Associate Professor, Pediatrics (General) and Medicine (Comprehensive) and Associate Dean for Ambulatory Services.

Donald C. Fidler, M.D. (U.N.C.). Associate Professor, Behavioral Medicine and Psychiatry.

Melanie A. Fisher, M.D. (Penn St. U.). Interim Section Chief and Associate Professor, Medicine (Infectious Diseases).

Christina J. Flaxel, M.D. (Ore. H.S.U.). Instructor, Ophthalmology.

William W. Fleming, Ph.D. (Princeton U.). Chairperson and Professor, Pharmacology and Toxicology.

Edmund B. Flink, M.D., Ph.D. (U. Minn.). Professor Emeritus, Medicine (Metabolism and Endocrinology) and Behavioral Medicine and Psychiatry.

Daniel C. Flynn, Ph.D. (WCSU). Assistant Professor, Microbiology and Immunology.

David Fogarty, M.D. (WVU). Clinical Associate Professor, Surgery (Plastic Surgery).

Gunter N. Franz, Ph.D. (U. Wash.). Associate Professor, Physiology.

Michael D. Franzen, Ph.D. (S. Ill. U.). Associate Professor, Behavioral Medicine and Psychiatry.

John C. Frich, Jr., M.D. (Geo. Wash. U.). Professor, Radiation Oncology.

Mathis P. Frick, M.D. (U. Zurich). Chairperson and Professor, Radiology.

Morton H. Friedman, Ph.D. (U. Tenn.). Associate Professor, Anatomy.

James L. Frost, M.D. (Johns Hopkins U.). Professor, Pathology and Neurology and Medical Examiner.

Elizabeth A. Funk, M.D. (Ind. U.). Associate Professor, Medicine—Charleston Division.

Patricia Gainor, M.D. (WVU). Adjunct Assistant Professor, Behavioral Medicine and Psychiatry.

Ronald D. Gaskins, M.D. (U. of S.C.). Section Chief and Associate Professor, Medicine (Gastroenterology).

Laura F. Gibson, Ph.D. (WVU). Research Instructor, Pediatrics (Genetics).

Leo Gibson, D.O. (WVSOM). Assistant Professor, Family Medicine—Charleston Division.

Mark Gibson, M.D. (Case Western Reserve). Chairperson and Professor, Obstetrics and Gynecology.

Wilbert E. Gladfelder, Ph.D. (U. Penn.). Associate Professor, Physiology.

Douglas D. Glover, M.D. (Emory U.). Professor, Obstetrics and Gynecology.

Elbert D. Glover, Ph.D. (Tex. Wom. U.). Professor, Behavioral Medicine and Psychiatry.

Penny N. Glover, M.Ed. (E. Car. U.). Research Instructor, Behavioral Medicine and Psychiatry.

Virginia L. Goetsch, Ph.D. (U. Ga.). Assistant Professor, Behavioral Medicine and Psychiatry.

Mark A. Goodman, M.D. (SUNY). Clinical Associate Professor, Orthopedics.

Robert L. Goodman, Ph.D. (U. Pitt.). Professor, Physiology.

Howard R. Gordon, M.D. (U. Roch.). Professor, Obstetrics and Gynecology—Charleston Division.

Geoffrey M. Graeber, M.D. (SUNY). Professor, Surgery (Thoracic).

Janet E. Graeber, M.D. (SUNY). Associate Professor, Pediatrics (Neonatology).

David F. Graf, M.D. (Albany Med. C.). Associate Professor, Anesthesiology.

Deborah S. Granke, M.D. (U. Mich.). Adjunct Assistant Professor, Radiology (Diagnostic).

Kenneth Granke, M.D. (Wayne St. U.). Assistant Professor, Surgery (Vascular).

James P. Griffith, M.D. (WVU). Assistant Professor, Medicine and Behavioral Medicine and Psychiatry—Charleston Division.

Richard T. Gross, Ph.D. (WVU). Associate Professor, Behavioral Medicine and Psychiatry and Anesthesiology.

Stephen R. Grubb, M.D. (Med. C. Va.). Associate Professor, Medicine—Charleston Division.

Robert A. Gustafson, M.D. (WVU). Associate Professor, Surgery (Thoracic).

Alvaro R. Gutierrez, M.D. (U. Nat'l Ncional Day, Rosaril Argentina). Assistant Professor, Neurology.

Barbara J. Gutman, M.Ed. (U. Pitt.). Associate Professor, Medical Technology.

Ludwig Gutmann, M.D. (Columbia U.). Chairperson and Professor, Neurology and Professor, Physiology.

Anne E. Elder Hackett, M.D. (Med. U. of SC). Assistant Professor, Anesthesiology.

James K. Hackett, M.B.A. (Tulane U.). Associate V.P., Finance—HSC; Associate Dean, School of Medicine.

Kevin A. Halbritter, M.D. (WVU). Assistant Professor, Medicine (Comprehensive).

David S. Hall, Ph.D. (U. Ky.). Associate Professor, Community Medicine.

James P. Hall, M.D. (U. Maryland). Assistant Professor, Family Medicine, Charleston Division.

John E. Hall, Ph.D. (Purdue U.). Professor, Microbiology and Immunology.

William L. Hall II, M.D. (WVU). Clinical Associate Professor, Medicine (Dermatology).

Jungsoo Han, Ph.D. (U. Iowa). Research Assistant Professor, Orthopedics.

Thomas F. Harman, M.D. (Ohio St. U.). Assistant Professor, Obstetrics and Gynecology.

Carole V. Harris, Ph.D. (U. Fla.). Assistant Professor, Behavioral Medicine and Psychiatry.

Charles L. Harris, Ph.D. (U. Ill.). Professor, Biochemistry.

Jennifer S. Haut, Ph.D. (U. N.D.). Assistant Professor, Behavioral Medicine and Psychiatry.

Marc W. Haut, Ph.D. (U. N.D.). Assistant Professor, Behavioral Medicine and Psychiatry and Neurology.

George A. Hedge, Ph.D. (Stanford U.). Professor, Physiology (Van Lier Professor); Associate Dean, Research & Graduate Studies.

James D. Helsley, M.D. (WVU). Associate Professor, Family Medicine.

Marta J. Henderson, M.S. (WVU). Associate Professor, Medical Technology.

Elijah R. Heywood, M.D. (U. Utah). Associate Professor, Obstetrics and Gynecology—Charleston Division.

Ronald C. Hill, M.D. (WVU). Associate Professor, Surgery (Thoracic).

Frank B. Hillgartner, Ph.D. (Mich. St. U.). Assistant Professor, Biochemistry.

Rumy A. Hilloowala, Ph.D. (U. Ala.). Associate Professor, Anatomy.

Julio Hochberg, M.D. (Faculdade Catolica de Medicina de Porto Alegre RS, Brazil). Associate Professor, Surgery (Plastic Surgery).

Robert D. Hoeldtke, M.D. (Cornell). Section Chief and Professor, Medicine (Metabolism and Endocrinology).

Donald L. Hoffman, M.D. (A. Einstein Col.). Instructor, Neurology.

Jean Holter, Ed.D. (WVU). Professor, Medical Technology.

Vickie Williams Hott, M.D. (WVU). Assistant Professor, Radiology (Diagnostic).

Ellen E. Hrabovsky, M.D. (Vanderbilt U.). Professor, Surgery (pediatric) and Pediatrics.

Paul B. Hsueh, Ph.D. (Ohio St. U.). Research Assistant Professor, Medicine (Clinical Nutrition).

Wei-Shau Hu, Ph.D. (U.C. Davis). Assistant Professor, Microbiology and Immunology.

Marybeth Hummel, M.D. (Ind. U.). Assistant Professor, Pediatrics (Genetics).

Eric Hamilton Humphries, Ph.D. (U. Wisc.). Professor, Microbiology and Immunology.

Janis L. Hurst, M.D. (WVU). Adjunct Assistant Professor, Radiology (Diagnostic).

Richard M. Iammarino, M.D. (Stritch Sch. Med.). Adjunct Professor, Pathology.

Jose E. Irazuzta, M.D. (U. Nacional De Cordoba). Assistant Professor, Pediatrics—Charleston Division.

Michael A. Istfan, M.D. (Marshall U.). Assistant Professor, Medicine—Charleston Division.

Jeffrey P. Jackson, M.D. (WVU). Instructor, Medicine (Comprehensive).

Ellen Jacobsen, M.D. (U. Iowa). Adjunct Assistant Professor, Pediatrics and Medicine (Dermatology).

Singanallur N. Jagannathan, Ph.D. (U. Bombay). Professor, Pathology and Biochemistry.

Abnash C. Jain, M.D. (Govt. Med. C., Patiala). Section Chief and Professor, Medicine (Cardiology).

Shanker Japa, Ph.D. (Jawaharlal Nehru U.). Research Assistant Professor, Biochemistry.

Chet D. Johnson, M.D. (U. Kans.). Assistant Professor, Pediatrics (Child Development).

Michael D. Johnson, Ph.D. (U. Mich.). Professor, Physiology.

Robert E. Johnstone, M.D. (Ohio St. U.). Professor, Anesthesiology.

Eric T. Jones, M.D. (U. Mich.). Clinical Professor, Orthopedics.

John E. Jones, M.D. (U. Utah). Professor Emeritus, Medicine (Metabolism and Endocrinology).

Dale M. Joret, M.D. (Temple U.). Assistant Professor, Obstetrics and Gynecology.

Frances B. Juriga, M.S. (WVU). Assistant Professor, Medical Technology.

Stanley J. Kandzari, M.D. (WVU). Professor, Urology.

Howard H. Kaufman, M.D. (Columbia U.). Chairperson and Professor, Neurosurgery.

Robert W. Keefover, M.D. (Marshall U.). Assistant Professor, Neurology and Behavioral Medicine and Psychiatry.

Gordon Keyes, D.D.S. (U. Md.). Professor, Pathology.

Rashida A. Khakoo, M.D. (Makerere U.). Interim Chairperson and Professor, Medicine (Infectious Diseases).

Christine R. Kincaid, M.D. (WVU). Assistant Professor, Medicine (Comprehensive) and Pediatrics.

John H. King, M.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.

David M. Kinney, M.D. (WVU). Assistant Professor, Family Medicine.

Ralph G. Kirk, Ph.D. (Yale U.). Professor, Anatomy.

John E. Kizer, M.D. (U.C. Davis). Assistant Professor, Surgery (Trauma).

Penprapa S. Klinkachorn, Ph.D. (WVU). Visiting Instructor of Anatomy.

Kazunari J. M. Koike, Ph.D. (U. Tenn.). Associate Professor, Otolaryngology.

Maria M. Kolar, M.D. (WVU). Assistant Professor, Medicine (Comprehensive).

Martin J. Kommor, M.D. (U. S.C.). Chief and Associate Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Gregory W. Konat, Ph.D. (Odense U.). Professor, Anatomy and Pediatrics.

Jian-Qiang Kong, Ph.D. (Sum Yat Sen Med. U.). Research Instructor, Pharmacology and Toxicology.

Rodney F. Kovach, M.D. (WVU). Associate Professor, Otolaryngology and Medicine (Dermatology).

Lloyd Kurth, D.O. (WVSOOM). Adjunct Assistant Professor, Orthopedics.

Donald L. Lamm, M.D. (UCLA). Chairperson and Professor, Urology.

Kenneth S. Landreth, Ph.D. (U. Wash.). Associate Professor, Microbiology and Immunology and Pediatrics.

N. LeRoy Lapp, M.D. (Temple U.). Professor, Medicine (Pulmonary Medicine).

Richard D. Layne, M.D. (WVU). Associate Professor, Medicine (Comprehensive) and Interim Director of the Geriatric Program.

Ping Lee, Ph.D. (Duke U.). Interim Chairperson and Professor, Physiology.

Michael J. Lewis, M.D. (WVU). Associate V.P. for Health Sciences and Professor, Family Medicine—Charleston Division.

John V. Linberg, M.D. (WVU). Associate Professor, Ophthalmology.

John C. Linton, Ph.D. (Kent St. U.). Associate Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Karen S. Long, M.S. (WVU). Assistant Professor, Medical Technology.

Juanita K. Loy, BSPT (WVU). Visiting Instructor, Physical Therapy.

Frank C. Lucente, M.D. (WVU). Assistant Professor, Surgery—Charleston Division.

Joseph Lynch, M.D. (Georgetown U.). Assistant Professor, Medicine (Hematology/Oncology).

Andrew H. Mace, Jr., M.D. (WVU). Associate Professor, Radiology (Diagnostic).

Marian S. Macsai, M.D. (Rush U.). Assistant Professor, Ophthalmology.

Edward J. Mahin, M.D. (Tehran Med. Sch.). Assistant Professor, Pathology (Clinical).

Daniel A. Mairs, M.D. (Duke U.). Chief and Professor, Obstetrics and Gynecology—Charleston Division.

John Manchin II, D.O. (WVSOOM). Clinical Instructor, Community Medicine.

Marybeth Mandich, Ph.D. (WVU). Associate Professor, Physical Therapy.

Paris T. Mansmann, M.D. (Jeff. Med. Col.). Assistant Professor, Medicine (Rheumatology) and Pediatrics.

James D. Martin, M.D. (Vanderbilt U.). Professor, Neurology.

Orestes A. Martinez, M.D. (Fac. Med. San Fernando, Peru). Adjunct Professor, Anesthesiology.

Abdel Massoud, M.B.C.B. (Ain-Shams U., Egypt). Assistant Professor, Behavioral Medicine and Psychiatry.

Michael G. Mawhinney, Ph.D. (WVU). Professor, Urology and Pharmacology and Toxicology.

Charles D. Mayron, M.D. (NYU). Assistant Professor, Ophthalmology.

Tandy J. McClung, Ed.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.

Michael W. McDonald, M.D. (Tulane U.). Associate Professor, Urology.

Donald E. McDowell, M.D. (Temple U.). Associate Professor, Surgery (Vascular).

James E. McJunkin, M.D. (WVU). Associate Professor, Pediatrics—Charleston Division.

Lydia McLarnon, Ph.D. (Concordia U., Montreal). Assistant Professor, Behavioral Medicine and Psychiatry.

James M. Mears, M.D. (Marshall U.). Assistant Professor, Family Medicine—Charleston Division.

Catalino B. Mendoza, Jr., M.D. (Manila Central U.). Clinical Professor, Surgery (General Surgery).

Henry F. Mengoli, Ph.D. (Cath. U. Am.). Associate Professor, Microbiology and Immunology.

James E. Mergelas, M.D. (U. Toronto). Assistant Professor, Radiology (Diagnostic).

Mieczyslaw Michalkiewicz, Ph.D. (Warsaw Agr. U.). Research Associate Professor, Physiology.

Ronald J. Millecchia, Ph.D. (Rockefeller U.). Associate Professor, Physiology.

Michael R. Miller, Ph.D. (Penn. St. U.). Professor, Biochemistry.

Philip J. Monroe, Ph.D. (WVU). Research Assistant Professor, Anesthesiology and Pharmacology and Toxicology.

Renee S. Moore, M.D. (WVU). Adjunct Assistant Professor, Pediatrics (General).

David M. Morgan, M.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry and Physician for the University Health Service.

David Z. Morgan, M.D. (Med. Col. Va.). Professor, Medicine (Cardiology). Behavioral Medicine and Psychiatry, and the Geriatric Program.

Edwin J. Morgan, M.D. (U. Pitt.). Professor, Behavioral Medicine and Psychiatry, Medicine (Behavioral and Ambulatory Medicine). and Medical Director, University Health Service.

Winfield S. Morgan, M.D. (Temple U.). Chairperson and Professor, Pathology.

Anthony P. Morise, Jr., M.D. (U. Vt.). Associate Professor, Medicine (Cardiology).

Alvin H. Moss, M.D. (U. Penn.). Associate Professor, Medicine (Nephrology) and Director of Ethics Program.

Martha K. Mullett, M.D. (WVU). Professor, Pediatrics (Neonatology).

Gordon F. Murray, M.D. (U. Mich.). Section Chief, Chairperson, and Professor, Surgery (Thoracic).

David Z. Myerberg, M.D. (Columbia U.). Associate Professor, Pediatrics.

Charlotte Nath, Ed.D. (WVU). Associate Professor, Family Medicine.

William A. Neal, M.D. (WVU). Chairperson and Professor, Pediatrics.

Sarah M. Nease, M.D. (WVU). Assistant Professor, Medicine—Charleston Division.

Jeffrey L. Neely, M.D. (WVU). Associate Professor, Medicine (Comprehensive).

Owen A. Nelson, M.D. (U. C.-Davis). Clinical Assistant Professor, Orthopedics.

Mark A. Newbrough, M.D. (WVU). Assistant Professor, Medicine—Charleston Division.

Neal A. Newfield, Ph.D. (Texas Tech U.). Assistant Professor, Behavioral Medicine and Psychiatry.

Patton V. Nickell, M.D. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry and Medicine (Comprehensive).

William E. Noble, M.D. (U. Pitt.). Clinical Associate Professor, Medicine—Wheeling Division.

T. Michael Nork, M.D. (U. Tex. -San Antonio). Associate Professor, Ophthalmology and Pathology.

Lamont D. Nottingham, Ed.D. (U. Va.). Adjunct Assistant Professor, Community Medicine and Assistant Director of the Central AHEC Program—Charleston Division.

Unyime O. Nseyo, M.D. (U. Mo.). Associate Professor, Urology.

G. Robert Nugent, M.D. (U. Cincinnati). Adjunct Professor, Neurosurgery.

James V. Odom, Ph.D. (U. N.C.). Associate Professor, Ophthalmology.

Gregg M. O'Malley, M.D. (U. of Pitt.). Clinical Instructor, Orthopedic Surgery.

Rawhi A. Omar, M.D. (Med. Acad. Sofia). Associate Professor, Pathology.

Laurel A. Omert, M.D. (Loyola). Assistant Professor, Surgery. (Trauma).

James F. O'Neal, M.D. (Marshall U.). Assistant Professor, Medicine—Charleston Division.

Orlando Ortiz, M.D. (Harvard U.). Assistant Professor, Radiology (Diagnostic).

Henry W. Overbeck, M.D., Ph.D. (Northwestern U.). Professor, Medicine (Cardiology) and Physiology.

Dennis O. Overman, Ph.D. (U. Mich.). Associate Professor of Anatomy.

Thomas G. Pait, M.D. (Geo. Wash. U.). Assistant Professor, Neurosurgery.

Jan E. Palmer, M.D. (SUNY). Associate Professor, Family Medicine and Physician for University Health Service.

Jyoti R. Patel, M.B.B.S. (U. Baroda, India). Assistant Professor, Family Medicine and Physician for University Health Service.

Vinay K. Pathak, Ph.D. (U.C.-Davis). Assistant Professor, Biochemistry.

Patricia G. Patterson, M.D. (U. Tex.). Assistant Professor, Medicine (Nephrology).

Debra J. Paulson, M.D. (U. Min.). Assistant Professor, Emergency Medicine.

Rita K. Payne, M.D. (U. Tex.). Assistant Professor, Obstetrics and Gynecology.

Richard J. C. Pearson, M.D. (Cambridge U.). Chairperson and Professor, Community Medicine and Family Practice.

Kathaleen C. Perkins, M.D. (Albany Med. Col.). Assistant Professor, Pediatrics and Physician for University Health Service.

Víctor T. Perrone, M.D. (U. Guadalajara). Clinical Associate Professor, Medicine—Wheeling Division.

Jane A. Pertko, C. P.T. (WVU). Assistant Professor, Physical Therapy.

John J. Petronis, M.S. (WVU). Professor, Physical Therapy.

Randolph L. Pifer, M.D. (WVU). Assistant Professor, Pediatrics and Physician for the University Health Service.

Carlin A. Pinkstaff, Ph.D. (Emory U.). Professor, Anatomy.

Mark J. Polak, M.D. (WVU). Assistant Professor, Pediatrics (Neonatology).

Cecil R. Pollard, M.A. (WVU). Research Assistant Professor, Community Medicine.

Scott E. Pollard, M.D. (U. Tex.). Assistant Professor, Behavioral Medicine and Psychiatry.

Charles D. Ponte, Pharm.D. (U. Utah). Professor, Family Medicine.

Robert S. Pope, Ph.D. (U. N. D.). Associate Professor, Anatomy.

Robert S. Pore, Ph.D. (UCLA). Professor, Microbiology and Immunology.

William R. Post, M.D. (Med. Col. Pa.). Assistant Professor, Orthopedics.

Roxann L. Powers, M.D. (WVU). Section Chief and Professor, Medicine (Comprehensive Medicine).

John E. Prescott, M.D. (Georgetown U.). Director and Assistant Professor, Surgery (Emergency Medicine).

James M. Previll, M.D. (WVU). Associate Professor, Medicine—Charleston Division.

Kathleen U. Previll, M.D. (WVU). Assistant Professor, Pediatrics—Charleston Division.

Terry G. Pritt, M.D. (Marshall U.). Assistant Professor, Behavioral Medicine and Psychiatry.

Lee A. Pyles, M.D. (WVU). Assistant Professor, Pediatrics (Cardiology).

Eugene A. Quarrick, Ph.D. (Syracuse U.). Professor, Behavioral Medicine and Psychiatry.

Gale W. Raftar, Ph.D. (U. Wash.). Professor, Biochemistry.

Peter C. Raich, M.D. (U. Wisc.). Section Chief and Professor, Medicine (Hematology/ Oncology).

Hassan H. Ramadan, Ph.D. (Am. U., Beirut). Assistant Professor, Otolaryngology.

William D. Ramsey, M.D. (WVU). Assistant Professor, Emergency Medicine.

Eric D. Rankin, Ph.D. (U. Chicago). Assistant Professor, Behavioral Medicine and Psychiatry.

Kenneth J. Reamy, M.D. (Tufts U.). Professor, Obstetrics and Gynecology and Behavioral Medicine and Psychiatry.

Mark J. Reasor, Ph.D. (Johns Hopkins U.). Professor, Pharmacology and Toxicology.

Robert B. Reger, Ph.D. (WVU). Research Associate Professor, Occupational Medicine.

Carol M. Reid, M.D. (U. Wisc.). Assistant Professor, Otolaryngology.

Frank D. Reilly, Ph.D. (U. Cincinnati). Professor, Anatomy.

Larry A. Rhodes, M.D. (WVU). Assistant Professor, Pediatrics (Cardiology).

Joelyn M. Richards, M.D. (U. Minn.). Assistant Professor, Medicine (Nephrology).

Jack E. Riggs, M.D. (U. Rochester). Professor, Neurology, Community Medicine, and Medicine.

Orval E. Riggs, M.D. (U. Ark.). Associate Professor, Surgery (General).

Cheryl M. Riley, M.A. (U. of Ark.). Instructor, Behavioral Medicine and Psychiatry.

Roger S. Riley, M.D. (WVU). Associate Professor, Pathology (Clinical).

A. Kim Ritchey, M.D. (U. Cincinnati). Professor, Pediatrics (Hematology/Oncology).

Susan K. Ritchie, M.P.H. (U. N.C.). Associate Professor, Pediatrics (Neonatology).

Nicolene L. Roberts, Assistant Professor, Behavioral Medicine and Psychiatry and Specialist in University Health Services.

Marian Roberts-Ward, A.C.S.W. (WVU). Assistant Professor, Behavioral Medicine and Psychiatry.

Joan Robison, Ph.D. (U. Ga.). Associate Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Satyabhlashi P. Rochlani, M.B.B.S. (U. Madras). Associate Professor, Pathology.

Jeanne A. Rodman, M.D. (U. Iowa). Adjunct Professor, Anesthesiology.

Nathaniel F. Rodman, M.D. (U. Penn.). Professor, Pathology.

John S. Rogers II, M.D. (Geo. Wash. U.). Associate Professor, Medicine (Hematology/Oncology).

Paolo Romero, M.D. (U. Turin). Assistant Professor, Medicine (Hematology/Oncology).

Angela J. Rosas, M.D. (U.C.-San Diego). Assistant Professor, Pediatrics (General).

J. Fernando Rosas, M.D. (U. Autonoma de Baja Cal.). Assistant Professor, Pediatrics (Rural Health).

William D. Rose, M.D. (WVU). Associate Professor, Emergency Surgery.

David A. Rosen, M.D. (E. Va. Med. Sch.). Associate Professor, Anesthesiology.

Kathleen R. Rosen, M.D. (E. Va. Med.Sch.). Adjunct Associate Professor, Anesthesiology.

James G. Rosencrance, M.D. (Marshall U.). Assistant Professor, Medicine—Charleston Division.

Floyd K. Russell, Jr., Ed.D. (WVU). Assistant Professor, Community Medicine.

Jaiyoung Ryu, M.D. (Cath. Med. Col., Seoul). Associate Professor, Orthopedics.

Lisa M. Salati, Ph.D. (U. Minn.). Assistant Professor, Biochemistry.

Adrienne K. Salm, Ph.D. (Mich. State U.). Assistant Professor, Anatomy.

Atef K. Sayed, M.B.B.C. (Cairo U.). Assistant Professor, Pathology.

Rosana Schafer, Ph.D. (Temple U.). Research Instructor, Microbiology and Immunology.

Franklin G. Schiebel, M.D. (U. Mex.). Associate Professor, Surgery and Neurosurgery.

Stanley B. Schmidt, M.D. (U. Va.). Associate Professor, Medicine (Cardiology).

Sydney S. Schochet, M.D. (Tulane U.). Professor, Pathology, Neurology and Neurosurgery.

Judith S. Schreiman, M.D. (Mich. St. U.). Professor, Radiology.

Terry L. Schwartz, M.D. (WVU). Assistant Professor, Ophthalmology.

Steve L. Sebert, M.D. (WVU). Associate Professor, Family Medicine.

Donald G. Seibert, M.D. (Geo. Wash. U.). Assistant Professor, Medicine (Gastroenterology).

Richard J. Seime, Ph.D. (U. Minn.). Professor, Behavioral Medicine and Psychiatry.

John M. Shamma'a, M.D. (Emory U.). Associate Professor, Medicine (Gastroenterology).

Mohammad H. Shamsian, Ph.D. (Loughbrook, U.K.). Research Assistant Professor, Medicine (Pulmonary).

James M. Shell, Ph.D. (U. Ky.). Assistant Professor, Microbiology and Immunology.

Lauralee Sherwood, D.V.M. (Mich. St. U.). Professor, Physiology.

Andrew K. Shiemke, Ph.D. (Oregon Grad. Ctr.). Assistant Professor, Biochemistry.

William T. Shockcor, M.D. (U. Vt.). Assistant Professor, Medicine (Comprehensive).

Jeffrey S. Shultz, M.D. (WVU). Chief and Professor, Medicine—Wheeling Division.

James M. Shumway, Jr., Ph.D. (U. N.C.). Associate Dean for Education Programs and Associate Professor, Medicine (Comprehensive) and Pediatrics.

Doyle R. Sickles, M.D. (WVU). Clinical Instructor, Orthopedics.

Rosanne D. Sikora, M.D. (WVU). Assistant Professor, Emergency Medicine, Pediatrics, and Medicine (Comprehensive).

George Millard Simmons, Jr., M.D. (U. Vt.). Professor, Obstetrics and Gynecology.

Kenneth J. Simon, D.Ed. (Columbia U.). Associate Professor, Community Medicine.

Harvinder Singh, M.D. (Punjab U., India). Instructor, Medicine (Cardiology).

Purendra P. Sinha, M.B.B.S. (Patna U., India). Associate Professor, Radiation Oncology.

Stephen T. Slack, Ph.D. (Penn. St. U.). Section Chief and Associate Professor, Radiology (Radiation Safety).

Raymond A. Smego, Jr., M.D. (U. of N.J.). Associate Professor, Medicine (Infectious Diseases).

David J. Smith, Ph.D. (WVU). Professor, Anesthesiology and Pharmacology and Toxicology.

David M. Smith, M.D. (WVU). Assistant Professor, Anesthesiology.

Guy K. Smith, Ph.D. (Med. Col. of Va.). Assistant Professor, Radiology (Radiation Safety).

Lee B. Smith, M.D. (Marshall U.). Instructor of Emergency Medicine.

Irvin S. Snyder, Ph.D. (U. Kans.). Professor, Microbiology and Immunology.

Michael Sorkin, M.D. (Northwestern U.). Section Chief and Associate Professor, Medicine (Nephrology).

George A. Spirou, Ph.D. (U. Fla.). Assistant Professor, Otolaryngology and Physiology.

Nangali Srinivasa, M.B.B.S. (Bangalore Med. Col.). Assistant Professor, Medicine (Nephrology).

Walter S. Stalenski, M.D. (WVU). Assistant Professor, Anesthesiology.

Kenneth A. Starling, M.D. (Duke U.). Professor of Pediatrics—Charleston Division.

William T. Stauber, Ph.D. (Rutgers U.). Professor, Physiology, Neurology, and Behavioral Medicine and Psychiatry.

Marie E. Steiner, M.D. (U. Min.). Assistant Professor, Pediatrics.

Larry J. Stemple, M.D. (WVU). Clinical Assistant Professor, Orthopedics.

Arlene J. Stern, M.D. (Hahnemann Med. Col.). Associate Professor, Medicine—Wheeling Division.

James M. Stevenson, M.D. (WVU). Associate Dean, Continuing Medical Education and Development, Chairperson and Professor, Behavioral Medicine and Psychiatry.

Daniel H. Stewart, M.D. (WVU). Assistant Professor, Surgery (Plastic Surgery).

Robert E. Stitzel, Ph.D. (U. Minn.). Professor of Pharmacology and Toxicology.

David A. Stoll, M.D. (U. Iowa). Clinical Assistant Professor, Orthopedics.

Richard J. Strasburger, Ed.D. (WVU). Research Associate Professor, Pediatrics (Child Development).

Jeannine Strobl, Ph.D. (Geo. Wash. U.). Professor, Pharmacology and Toxicology.

Edward H. Stullken, M.D. (U. Ill.). Chairperson and Professor, Anesthesiology.

C. Rollyn Sullivan III, M.D. (WVU). Associate Professor, Behavioral Medicine and Psychiatry and Medicine (Comprehensive).

Daniel R. Sullivan, M.D. (Jeff. Med. Col.). Adjunct Professor, Anesthesiology.

Pamela M. Sullivan, M.D. (WVU). Adjunct Associate Professor, Behavioral Medicine and Psychiatry.

Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.). Instructor, Pediatrics (General).

Shiro Suzuki, Ph.D. (National Kyusyu U.). Research Professor, Ophthalmology.

Randall A. Swain, M.D. (WVU). Assistant Professor, Family Medicine—Charleston Division.

Marian L. Swinker, M.D. (Penn. St. U.). Associate Professor, Family Medicine.

William F. Tarry, M.D. (Penn. St. U.). Associate Professor, Urology and Pediatrics.

David A. Taylor, Ph.D. (WVU). Professor of Pharmacology and Toxicology.

Harry L. Taylor, M.D. (Med. Col of Va.). Section Chief and Associate Professor, Pathology (Clinical).

Luis Teba, M.D. (U. Granada Med. Sch.). Associate Professor, Medicine (Pulmonary) and Anesthesiology.

John G. Thomas, Ph.D. (Syracuse U.). Professor, Pathology (Clinical).

Herbert Thompson, Ph.D. (U. Kans.). Associate Professor, Microbiology and Immunology.

Gregory A. Timberlake, M.D. (U.Va.). Associate Professor, Surgery (Trauma).

Louis W. Tinnin, M.D. (U. Chicago). Associate Professor, Behavioral Medicine and Psychiatry.

Roger C. Toffle, M.D. (U. Minn.). Associate Professor, Obstetrics and Gynecology.

John W. Traubert, M.D. (Ohio St. U.). Associate Dean for Student Affairs and Professor, Family Medicine.

Dianne W. Trumbull, M.D. (U. N.C.). Adjunct Assistant Professor, Behavioral Medicine and Psychiatry.

George P. Tryfiates, Ph.D. (Rutgers U.). Professor, Biochemistry.

Susan M. Tucker, M.D. (U. W. Ontario). Instructor, Ophthalmology.

Loraine Tyre, M.D. (WVU). Adjunct assistant Professor, Obstetrics and Gynecology and Physician for University Health Services.

Irma H. Ullrich, M.D. (U. Minn.). Professor, Medicine (Metabolism-Endocrinology).

Roberto C. Valenzuela, M.D. (Ind. U.). Assistant Professor, Anesthesiology.

Robert A. Vance, M.D. (WVU). Assistant Professor, Anesthesiology.

Knox Van Dyke, Ph.D. (St. Louis U.). Professor, Pharmacology and Toxicology.

John R. Vanin, M.D. (WVU). Associate Professor, Behavioral Medicine and Psychiatry and Physician for University Health Service.

Alexander Vasilakis, M.D. (WVU). Instructor, Surgery (Thoracic).

Richard A. Vaughan, M.D. (WVU). Assistant Professor, Surgery (Oncology) and Pediatrics.

Joseph L. Voelker, M.D. (Ind. U.). Assistant Professor, Neurosurgery.

Thomas W. Van Dohlen, M.D. (WVU). Associate Professor, Medicine—Charleston Division.

Donald M. Wald, M.D. (U. Kan.). Associate Professor, Radiology (Diagnostic).

James M. Waldeck, M.D. (WVU). Assistant Professor, Pediatrics—Charleston Division.

David K. Walker, M.D. (WVU). Associate Professor, Behavioral Medicine and Psychiatry—Charleston Division.

Elizabeth R. Walker, Ph.D. (WVU). Associate Professor, Anatomy.

Herbert E. Ward, Jr., M.D. (Med. Col. of S.C.). Assistant Professor, Behavioral Medicine and Psychiatry.

Herbert E. Warden, M.D. (U. Chicago). Professor, Surgery (Thoracic).

Mark K. Wax, M.D. (U. Toronto). Assistant Professor, Otolaryngology.

David L. Waxman, M.D. (U. Md.). Clinical Instructor, Orthopedics.

Carol J. Weaver, Ph.D. (WVU). Associate Professor, Physical Therapy.

Bruce Weinstein, Ph.D. (Georgetown U.). Assistant Professor, Community Medicine.

George W. Weinstein, M.D. (SUNY). Chairperson and Professor, Ophthalmology.

David N. Weissman, M.D. (Northwestern U.). Associate Professor, Medicine (Pulmonary).

William A. Welton, M.D. (U. Md.). Section Chief and Professor, Medicine (Dermatology).

Stephen J. Wetmore, M.D. (U. Mich.). Chairperson and Professor, Otolaryngology.

Scott Whisnant, Ph.D. (U. Ga.). Research Assistant Professor, Physiology.

Charles R. Whiteman, M.D. (WVU). Assistant Professor, Emergency Medicine.

Richard C. Wiggins, Ph.D. (Duke U.). Chairperson and Professor of Anatomy.

J. Hugh Wiley, M.D. (Med. Col. of Va.). Clinical Professor, Orthopedics.

Dorian J. Williams, M.D. (WVU). Assistant Professor, Family Medicine.

Janet M. Williams, M.D. (SUNY). Assistant Professor, Emergency Medicine.

Nevin W. Wilson, M.D. (U. Nev.). Assistant Professor, Pediatrics (Allergy).

Mary J. Wimmer, Ph.D. (U. N.C.). Associate Professor, Biochemistry.

George H. Wirtz, Ph.D. (Geo. Wash. U.). Professor, Biochemistry.

William F. Wonderlin, Ph.D. (Johns Hopkins U.). Assistant Professor, Pharmacology and Toxicology.

William D. Wyant, M.P.A. (WVU). Associate Professor, Community Medicine.

Tamer M. Yalcinkaya, M.D. (Istanbul U.). Assistant Professor, Obstetrics and Gynecology—Charleston Division.

David B. Yelton, Ph.D. (U. Mass.). Associate Professor of Microbiology and Immunology.

Stanley D. Yokota, Ph.D. (U. Calif.—Riverside). Associate Professor, Physiology.  
Fereydoun Zangeneh, M.D. (U. of Tehran). Associate Professor, Pediatrics—Charleston Division.

## School of Nursing

June C. Abbey, Ph.D., R.N. (U. Cal.—Berkeley). Visiting Professor.  
Shauna Aurelio, M.S.N., R.N. (WVU). Instructor.  
Laura Badzek, J.D., R.N. (WVU). Instructor.  
Barbara Banonis, M.S.N., R.N. (WVU). Lecturer.  
Rosemary Belden, M.S.N., R.N. (U. Va.). Adjunct Instructor.  
Sharon Bond, M.S.N., R.N. (U. Miss.). Instructor.  
Mary Frances Borgman, Ed.D., R.N. (WVU). Professor.  
Marjorie Bower, M.S.N., R.N. (WVU). Instructor.  
Margaret Burkhardt, Ph.D., R.N. (U. Miami). Associate Professor.  
Mary Jo Butler, Ed.D., R.N. (WVU). Chair, Charleston Unit; Associate Professor.  
Mary Beth Casdorph, M.S.N., R.N. (WVU). Visiting Instructor.  
Ann Cleveland, M.S.N., R.N. (U. Va.). Visiting Instructor.  
Jill Cochran, M.S.N., R.N. (WVU). Visiting Instructor, Kellogg Field Professor.  
Susan Collins, M.S.N., R.N. (Duke U.). Adjunct Instructor.  
Mona Counts, Ph.D., R.N. (U. Texas). Professor.  
Theresa Cowan, M.S.N., R.N. (WVU). Coordinator, GSC/WVU Joint Program; Visiting Instructor.  
Malene Davis, M.B.A., R.N. (WVU). Lecturer.  
Pamela Deiriggi, Ph.D., R.N. (U. Texas). Associate Professor.  
Patricia Diehl, M.A., R.N. (WVU). Associate Professor.  
Imogene Foster, M.S.N., R.N. (WVU). Assistant Professor.  
Suzanne Gross, M.N.Ed., R.N. (U. Pitt.) Chair, Senior Unit; Assistant Professor.  
Jo Anne Grunow, D.N.Sc., R.N. (Rush U.). Assistant Professor.  
Debra Harr, Ed.D., R.N. (WVU). Associate Professor.  
Elizabeth Kerr Hayes, M.S.N., R.N. (Vanderbilt U.). Visiting Associate Professor.  
Jean Hoff, M.P.H., R.N. (U. Pitt.). Visiting Associate Professor.  
Gwendolyn Holderman, M.S.N., R.N. (Penn. State). Visiting Instructor.  
Elizabeth Hupp, M.A., R.N. (WVU). Adjunct Instructor.  
Lorita Jenab, Ed.D., R.N. (Columbia U.). Dean *Emerita*.  
Dorothy Johnson, Ed.D., R.N. (WVU). Assistant Professor; Interim Chair, Junior Unit.  
Judith Kandzari, M.S.N., R.N. (WVU). Associate Professor.  
Beverly Knicely, M.S.N., R.N. (WVU). Adjunct Instructor.  
Barbara Knopp, M.S.N., R.N. (WVU). Instructor.  
Nancy Koontz, M.S.N., R.N. (U. Md.). Associate Professor.  
Barbara Koster, M.S.N., R.N. (WVU). Adjunct Instructor.  
Barbara Kupchak, Ph.D., R.N. (U. Texas). Visiting Assistant Professor.  
Susan Leight, M.S.N., R.N. (WVU). Lecturer.  
Nan Leslie, Ph.D., R.N. (U. Pitt.). Assistant Professor.  
Deborah Lewis, M.S.N., R.N. (WVU). Instructor.  
Donna Lyman, M.S., R.N. (U. Alaska). Lecturer.  
Sandra Marra, M.S.N., R.N. (WVU). Visiting Instructor.  
Kathleen Marsland, M.S., R.N. (U. Colo.). Assistant Professor.  
E. Jane Martin, Ph.D., R.N., F.A.A.N. (U. Pitt.). Professor and Dean  
Gaynelle McKinney, M.S.N.Ed., R.N., F.A.A.N. (Ind. U.). Professor *Emerita*.  
Elise Michael, Ph.D., R.N. (Case Western Reserve). Adjunct Associate Professor.  
Karen Miles, Ed.D., R.N. (WVU). Associate Professor.  
Lois C. Miracle, M.S.N. (U. Akron). Visiting Instructor, Kellogg Field Professor.  
Marsha Mitchell, Ed.D., R.N. (WVU). Assistant Professor.  
Alvita Nathaniel, M.S.N., R.N. (WVU). Lecturer.  
Mary Nemeth-Pyles, M.S.N., R.N. (WVU). Instructor.  
Susan Newfield, M.S.N., R.N. (U. Tex.). Assistant Professor.  
Tamara Nichols, M.S.N., R.N. (U. Ala. B.). Visiting Instructor.  
Barbara Nunley, M.S.N., R.N. (Ohio St. U.). Instructor.

Lois O'Kelley, M.S.N., R.N. (Wayne St.U.). Associate Professor *Emerita*.  
 Lynne Ostrow, Ed.D., R.N. (WVU). Associate Professor.  
 Marjorie Phillips, M.N.Ed., R.N. (U. Pitt.). Assistant Professor.  
 Marcia Pollard, J.D., M.S.N., R.N. (WVU). Lecturer.  
 Kay Prigga, M.S.N., R.N. (Wright St.). Visiting Instructor.  
 Jacqueline Riley, M.N., R.N. (U. Fla.). Associate Professor; Assistant Dean.  
 Susan Ritchie, M.P.H., R.N. (UNC). Adjunct Instructor.  
 Beverly Schaefer, M.S.N., R.N. (WVU). Visiting Instructor.  
 Joanne Seasholtz, Ph.D., R.N. (U. Pitt.). Adjunct Assistant Professor.  
 Jane Shrewsbury, M.N.Ed., R.N. (U. Pitt.). Associate Professor.  
 Patricia Simoni, Ed.D., R.N. (WVU). Associate Professor.  
 Mary Jane Smith, Ph.D., R.N. (NYU). Professor.  
 Frances Snodgrass, J.D., M.S.N., R.N. (Capital U. Law Sch., Ohio). Lecturer.  
 Loreto Sobong, Ph.D. (NYU), Research Associate.  
 Mary Kaye Staggers, M.S.N., R.N. (Wayne State). Coordinator, Potomac State College; Instructor.  
 Jacqueline Stemple, Ed.D., R.N. (WVU). Associate Professor; Chair, Sophomore Unit.  
 Fredona Stenger, M.S.N., R.N. (Boston U.). Associate Professor.  
 Martha Summers, M.S.N., R.N. (WVU), Visiting Instructor.  
 Sally M. Taylor, Ed.D., R.N. (WVU), Adjunct Assistant Professor.  
 Pamela Thompson, M.S.N., R.N. (Med Col. Ga.). Instructor.  
 Sally Tom, M.P.A., R.N., C.N.M. (Harvard). Visiting Assistant Professor, Director Nurse Midwifery Program.  
 Nancy Traubert, M.S.N., R.N. (Ohio State). Adjunct Instructor.  
 Janet Wang, Ph.D., R.N. (U. Pitt.). Associate Professor.  
 Louise Waszak, Ph.D., R.N. (U. Pitt.). Assistant Professor.  
 Joan E. Watson, Ph.D., R.N., F.A.A.N. (Ohio State). Professor; Associate Dean, Research & Graduate Education.  
 Linda Wayne, M.A., R.N. (WVCOGS). Visiting Instructor, Kellogg Field Professor.  
 Alison Witte, M.S., R.N. (U. Md.). Lecturer.  
 Alice Ziomek, B.S.N., R.N. (WVU). Visiting Instructor.

## School of Pharmacy

Marie A. Abate, Pharm.D. (U. Mich.). Professor, Clinical Pharmacy; Director, Drug Information Center; vice-Chairperson, Department of Clinical Pharmacy.  
 C. Bruce Alderman, B.S. (WVU). Clinical Instructor.  
 Joseph Alderson III, B.S. (WVU). Clinical Instructor.  
 Scot A. Anderson, B.S. (WVU). Clinical Instructor.  
 Michael A. Andria, Pharm. D. (Duquesne U.). Clinical Assistant Professor.  
 Wayne Atkinson, B.S. (WVU). Clinical Instructor.  
 Debora J. Ball, B.S. (WVU). Clinical Instructor.  
 Harvey P. Barton, B.S. (WVU). Clinical Instructor.  
 James D. Bartsch, B.S. (U. Wisc.). Clinical Assistant Professor.  
 Thomas B. Bay, B.S. (U. Wyoming). Clinical Instructor.  
 Trent Beach, Pharm. D. (U. Kentucky). Clinical Instructor.  
 Paul Becilla, B.S. (WVU). Clinical Instructor.  
 Darrell Billiter, B.S. (WVU). Clinical Instructor.  
 Virginia R. Blosser, B.S. (WVU). Clinical Instructor.  
 Jerry A. Bovenizer, B.S. (WVU). Clinical Instructor.  
 J. Scott Boyd, B.S. (WVU). Clinical Instructor.  
 Heidi Braun, Pharm.D. (U. Mich.). Clinical Assistant Professor.  
 Calvin C. Brister, Ph.D. (U. Miss.). Professor, Biopharmacy; Assistant Dean, Student Affairs.  
 David W. Brosh, B.S. (WVU). Clinical Instructor.  
 David M. Caplan, B.S. (WVU). Clinical Instructor.

John V. Carney, B.S. (WVU). Clinical Instructor.  
 Diane S. Casdorph, B.S. (WVU). Clinical Instructor.  
 Mary Castiglia, Pharm. D. (Med. U. S. Car.). Assistant Professor, Clinical Pharmacy.  
 Vijit Chinburapa, Ph.D. (U. Arizona). Assistant Professor, Behavioral and Administrative Pharmacy.  
 Thomas S. Clark, M.D. (WVU). Clinical Assistant Professor.  
 Cindy Clinebell, B.S. (WVU). Clinical Instructor.  
 Roger S. Cole, B.S. (WVU). Clinical Instructor.  
 James K. Coleman, B.S. (WVU). Clinical Instructor.  
 John E. Corkrean, B.S. (WVU). Clinical Instructor.  
 Susan Cosner, B.S. (WVU). Clinical Instructor.  
 Kathryn P. Craddock, B.S. (O. S. U.). Clinical Instructor.  
 D. Stephen Crawford, B.S. (WVU). Clinical Instructor.  
 R. Scott Criss, B.S. (WVU). Clinical Instructor.  
 Stephen G. Crowe, B.S. (WVU). Clinical Instructor.  
 David L. Dalton, B.S. (WVU). Adjunct Instructor in Pharmacy Administration.  
 Mary E. Davis, Ph.D. (Mich. St. U.). Associate Professor, Pharmacology.  
 Teresa Knight Davis, B.S. (WVU). Clinical Instructor.  
 Jaclyn H. Denemark, B.S. (WVU). Clinical Instructor.  
 Judy Dickinson, M.S. (U. Mich.). Clinical Instructor.  
 David Drennen, B.S. (WVU). Clinical Instructor.  
 Teri Dunsworth, Pharm. D. (U. Texas). Clinical Assistant Professor; Assistant Director, Drug Information Center.  
 J. Richard Eddy, M.S. (U. Md.). Clinical Instructor.  
 David P. Elliott, Pharm.D. (U. Tex.). Associate Professor, Clinical Pharmacy/Charleston Division.  
 Beth Faris, Pharm. D. (O.S.U.). Clinical Instructor.  
 Kenneth Ferrett, Pharm. D. (Duquesne U.). Clinical Instructor.  
 Robert L. Foster, Jr., B.S. (Auburn U.). Clinical Instructor.  
 Gary M. Fragale, B.S. (WVU). Clinical Instructor.  
 Linda Frederick, B.S. (WVU). Clinical Instructor.  
 Jack E. Fruth, B.S. (Ohio St. U.). Clinical Instructor.  
 A. Randon Fusco, B.S. (WVU). Clinical Instructor.  
 Peter Gannett, Ph.D. (U. Wisconsin). Assistant Professor, Medicinal Chemistry.  
 Barbara J. Gastineau, B.S. (WVU). Clinical Instructor.  
 Galen Gearheart, Pharm. D. (U. Kentucky). Clinical Instructor.  
 Thomas D. Gerkin, B.S. (WVU). Clinical Instructor.  
 Gwendolyn S. Gill, B.S. (WVU). Clinical Instructor.  
 Douglas D. Glover, M.D. (Emory U.). Associate Professor, Clinical Pharmacy.  
 C. Rodney Godwin, B.S. (WVU). Clinical Instructor.  
 Norval Goe, B.S. (WVU). Clinical Instructor.  
 Rochelle Goto, B.S. (Mass. C. Pharm.). Adjunct Instructor in Pharmacy Administration.  
 Joseph F. Griffith, B.S. (WVU). Clinical Instructor.  
 Robert K. Griffith, Ph.D. (Ohio St. U.). Associate Professor, Medicinal Chemistry.  
 Willard S. Griffith, B.S. (Cincinnati C. Pharm.). Clinical Instructor.  
 John W. Griffiths, B.S. (Ohio St. U.). Clinical Instructor.  
 Roy Gryskevich, B.S. (WVU). Clinical Instructor.  
 Danny J. Hackett, B.S. (WVU). Clinical Instructor.  
 Keith Hall, B.S. (WVU). Clinical Instructor.  
 J. Douglas Hammond, B.S. (WVU). Clinical Instructor.  
 Harold D. Harrison, B.S. (U. Maryland). Clinical Instructor.  
 Phillip Hearst, B.S. (WVU). Clinical Instructor.  
 Jeffrey A. Hess, B.S. (WVU). Clinical Instructor.  
 Jennifer Heyman, B.S. (WVU). Clinical Instructor.  
 Robert D. Hickman, B.S. (WVU). Clinical Instructor.  
 Gerry Higa, Pharm. D. (U. Pacific). Assistant Professor, Clinical Pharmacy.  
 Robert Hockenberry, B.S. (WVU). Clinical Instructor.  
 William Hockenberry, B.S. (WVU). Clinical Instructor.  
 L. Dean Holmes, B.S. (WVU). Clinical Instructor.  
 Carlton Hoskinson, B.S. (WVU). Clinical Instructor.  
 Stephen A. Howard, Ph.D. (U. Mich.). Adjunct Professor, Pharmaceutics.

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